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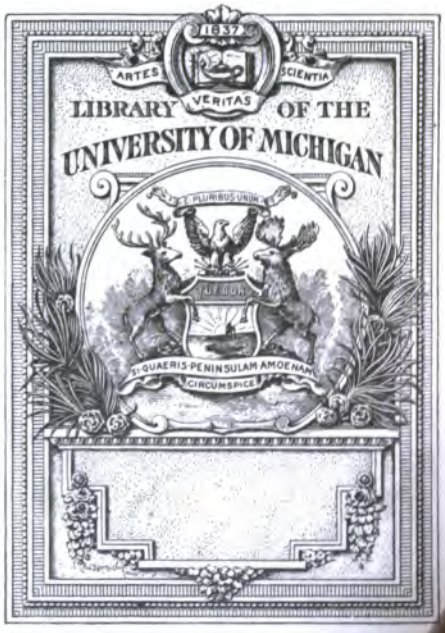
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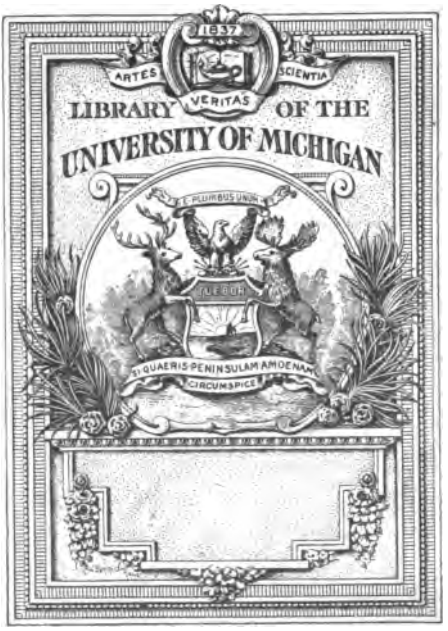
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TRANSACTIONS

OF

THE CLINICAL SOCIETY.

VOL. XIV.

TRANSACTIONS

OF

THE CLINICAL SOCIETY.

VOL. XIV.

LONDON: PRINTED BY
SPOTTISWOODE AND CO., NEW-STREET SQUARE
AND PARLIAMENT STREET

TRANSACTIONS

OF

THE CLINICAL SOCIETY

OF

LONDON.

VOLUME THE FOURTEENTH.

LONDON:
LONGMANS, GREEN, AND CO.
1881.

NOTICE.

THE present Volume comprises the Proceedings of the Society during its Fourteenth Session, October 1880 to May 1881.

The Council think it proper to state that the authors of the several communications are alone responsible for the statements, reasonings, and opinions contained in their respective papers.

53 BERNERS STREET, OXFORD STREET:
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ELECTED

1878 COLLIE, ALEXANDER, M.D.: Fever Hospital (Metropolitan Asylum District), The Grove, Homerton, E.

1878 COLLINS, W. M., M.D., M.C., Queen's Univ. I., Scots Guards: 70A Grosvenor Street, W.

1872 COOKE, THOMAS, Assistant Surgeon to the Westminster Hospital: 16 Woburn Place, Russell Square, W.C.

1868 COOPER, FRANK W.: Leytonstone, Essex.

1880 COTTLE, WYNDHAM, M.B., Senior Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars: 3 Savile Row, W.

Orig Memb COUPER, JOHN, Surgeon to the London Hospital and Assistant Surgeon to the Royal London Ophthalmic Hospital: 80 Grosvenor Street, W. (C. 1874.)

1875 COUPLAND, SIDNEY, M.D., Physician to, and Lecturer on Pathological Anatomy at, the Middlesex Hospital: 14 Weymouth Street, Portland Place, W.

1879 CRIPPS, WILLIAM HARRISON, Surgical Registrar to St. Bartholomew's Hospital; Surgeon to the Great Northern Hospital: 6 Stratford Place, Oxford Street, W.

1872 CRITCHETT, ANDERSON, Ophthalmic Surgeon to St. Mary's Hospital; Ophthalmic Surgeon to the Royal Free Hospital: 21 Harley Street, W.

1877 CROCKER, HENRY RADCLIFFE, M.D., Physician to the Skin Department, University College Hospital; Assistant Physician and Pathologist to the East London Hospital for Children: 28 Welbeck Street, Cavendish Square, W.

Orig Memb CROFT, JOHN, Surgeon to St. Thomas's Hospital: 61 Brook Street, Grosvenor Square, W. (C. 1870–2.)

1872 DALBY, WILLIAM BARTLETT, M.B. (C.), Aural Surgeon to St. George's Hospital: 18 Savile Row, W. (C. 1879–81.)

Orig Memb DAVIES, HERBERT, M.D., Senior Physician to, and Lecturer on Medicine at, the London Hospital: 23 Finsbury Square, E.C. (V.P. 1877.)

1879 DAVIES-COLLEY, J. NEVILLE C., M.B., M.C., Surgeon to Guy's Hospital: 36 Harley Street, Cavendish Square, W.

Orig Memb DAVIS, JOHN HALL, M.D., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women and Children at, the Middlesex Hospital: 37 Gloucester Place, Portman Square, W. (C. 1870.)

1879 DAVY, HENRY, M.B.: 34 Southernhay, Exeter.

1868 DAY, WILLIAM HENRY, M.D., Physician to the Samaritan Free Hospital for Women and Children: 10 Manchester Square, W.

ELECTED

1872 DE CASTRO, JAMES CATO, M.B.: Pau, France.

1879 †DENNIS, FREDERIC S., M.D.: 21 East 21st Street, New York, U.S.

1875 DENT, CLINTON T., Assistant Surgeon to St. George's Hospital: 29 Chesham Street, Belgrave Square, S.W.

Orig Memb DICKINSON, WILLIAM HOWSHIP, M.D., Physician to, and Lecturer on Medicine at, St. George's Hospital; Physician to the Hospital for Sick Children: 9 Chesterfield Street, Mayfair, W. (C. 1874–5.)

1871 DIVER, EBENEZER, M.D.: Caterham Valley.

1873 DONKIN, ARTHUR SCOTT, M.D.

Orig Memb DOWN, JOHN LANGDON H., M.D., Physician to, and Lecturer on Medicine at, the London Hospital: 81 Harley Street, W. (C. 1870–2.)

1874 DOWSE, THOMAS STRETCH, M.D.: 14 Welbeck Street, Cavendish Square, W.

1868 DRAGE, CHARLES, M.D.: Hatfield, Herts.

1879 DREWITT, F. G. DAWTREY, M.B.: Savile Club, 15 Savile Row.

Orig Memb DUCKWORTH, DYCE, M.D., Assistant Physician to St. Bartholomew's Hospital: 11 Grafton Street, Bond Street, W. (C. 1875–7.)

Orig Memb DUFFIN, ALFRED B., M.D., Physician to King's College Hospital, Professor of Pathological Anatomy in King's College, London: 18 Devonshire Street, Portland Place, W. (C. 1872–4.)

1869 DUKE, OLLIVER THOMAS, M.B., Surgeon, Bengal Army, India.

Orig Memb DURHAM, ARTHUR EDWARD, Surgeon to, and Lecturer on Surgery at, Guy's Hospital: 82 Brook Street, W. (C. 1867-9.)

Orig Memb EDIS, ARTHUR W., M.D., Assistant Obstetric Physician to the Middlesex Hospital: 22 Wimpole Street, Cavendish Square, W.

1881 ENGLISH, THOMAS JOHNSTON, M.D., 128 Fulham Road, S.W.

Orig Memb ERICHSEN, JOHN E., F.R.S., Holme Professor of Clinical Surgery in University College, and Senior Surgeon to University College Hospital: 6 Cavendish Place, Cavendish Square, W. (V.P. 1869–71.)

1876 EVANS, GEORGE HENRY, M.D.

1868 EVANS, JULIAN, M.B., Assistant Physician, Victoria Hospital for Sick Children: 123 Finborough Road, Redclyffe Square, S.W.

ELECTED

1877 EWART, WILLIAM, M.B., Lecturer on Physiological Chemistry at St. George's Hospital: 33 Curzon Street, Mayfair, W.

Orig Memb FAGGE, CHARLES HILTON, M.D., Physician to, and Lecturer on Pathology at, Guy's Hospital: 11 St. Thomas's Street, Southwark, S.E. (C. 1875–7.)

1868 FAIRBANK, FREDERICK ROYSTON, M.D.: 46 Hall Gate, Doncaster.

1872 FARQUHARSON, ROBERT, M.D., M.P.: Migvie Lodge, Porchester Gardens, Hyde Park W. (C. 1879–80.)

1872 FENWICK, J. C. J., M.B.: 16 Old Elvet, Durham.

1878 FIELD, GEORGE P., Aural Surgeon to St. Mary's Hospital: 31 Lower Seymour Street, Portman Square, W.

1876 FINLAY, DAVID WHITE, M.D., Assistant Physician to the Middlesex Hospital: 21 Montagu Street, Portman Square, W.

1868 FISH, JOHN CROCKETT, M.D.: 92 Wimpole Street, Cavendish Square, W. (C. 1869-70.)

1872 FISHER, FREDERIC R., Assistant Surgeon to the Victoria Hospital for Sick Children: 79 Grosvenor Street, W.

1879 FITZGERALD, WILLIAM A., M.B.: Royal London Ophthalmic Hospital, Blomfield Street, Moorfields, E.C.

1878 *FONMARTIN, HENRY DE, M.D. Par.: Knaphill, Woking, Surrey.

1881 FOWLER, JAMES KINGSTON, M.B.: 35 Clarges Street, Piccadilly, W.

1878 FOX, THOMAS COLCOTT, M.B. Lond., B.A. Camb.: 14 Harley Street, Cavendish Square, W.

Orig Memb FOX, WILSON, M.D., F.R.S., Physician Extraordinary to H.M. the Queen; Holme Professor of Clinical Medicine in University College, and Physician to University College Hospital: 67 Grosvenor Street, W. (C. 1873, V.P. 1878–9.)

1868 GANT, FREDERICK JAMES, Surgeon to the Royal Free Hospital: 16 Connaught Square, W. (C. 1877–9.)

1879 GARSTANG, THOMAS WALTER HARROPP: Oakleigh, Dobcross, near Manchester.

1868 GLOVER, JAMES GREY, M.D., Hon. Surgeon to the Holloway and North Islington Dispensary: 33 Compton Terrace, Islington, N. (C. 1878–80.)

1875 GODLEE, RICKMAN JOHN, M.S., M.B., Assistant Surgeon to University College Hospital: 81 Wimpole Street, Cavendish Square, W.

ELECTED

1878 GOLDING-BIRD, C. H., M.B., Assistant Surgeon to Guy's Hospital: 13 St. Thomas's Street, Southwark, S.E.

1875 GOODHART, JAMES FREDERICK, M.D. (C.), Assistant Physician to Guy's Hospital: 27 Weymouth Street, Portland Place, W. (C. 1880–81.)

1869 GOODRIDGE, HENRY FREDERICK AUGUSTUS, M.D., Physician to the Bath Royal United Hospital: Bath.

1881 GORDON, HUGH ALEX., M.D.: Holloway Prison, Camden Road.

1877 GOULD, A. PEARCE, M.S., Assistant Surgeon to, and Lecturer on Anatomy at, the Westminster Hospital: 16 Queen Anne Street, Cavendish Square, W.

1871 GOVER, ROBERT M., M.B.: 12 Hereford Gardens, W.

1875 GOWERS, WILLIAM RICHARD, M.D. (C.), Assistant Physician to University College Hospital: 50 Queen Anne Street, Cavendish Square, W. (C. 1881.)

1868 GREEN, T. HENRY, M.D., Physician to, and Lecturer on Pathology at, the Charing Cross Hospital: 74 Wimpole Street, W. (C. 1877–9.)

1875 GREENFIELD, WILLIAM SMITH, M.D. (C.), Professor of General Pathology in the University of Edinburgh: 7 Heriot Row, Edinburgh.

Orig Memb GREENHOW, EDWARD HEADLAM, M.D., F.R.S., Consulting Physician to the Middlesex Hospital: Castle Lodge, Reigate. (T. 1867–78, P. 1879–80.)

1868 †GUENEAU DE MUSSY, HENRI, M.D.: 15 Rue du Cirque, Paris.

Orig Memb GULL, Sir WILLIAM WITHEY, Bart., M.D., D.C.L., F.R.S., Physician Extraordinary to the Queen: 74 Brook Street, W. (V.P. 1868–70, P. 1871–2.)

1870 GWYNN, EDMUND, M.D.: 6 Hampstead Hill Gardens, N.W.

Orig Memb HABERSHON, SAMUEL OSBORNE, M.D.: 70 Brook Street, W. (C. 1873, V.P. 1878–9.)

1875 HALE, C. D. B.: 8 Sussex Gardens, Hyde Park, W.

1878 HALL, F. DE HAVILLAND, M.D., Assistant Physician to the Westminster Hospital: 46 Queen Anne Street, Cavendish Square, W.

1878 HAMILTON, J. LAWRENCE, L.R.C.P. Ed.: 34 Gloucester Terrace, Hyde Park, W.

1873 HARLEY, GEORGE, M.D., F.R.S.: 25 Harley Street, Cavendish Square, W.

Elected	
Orig Memb	Harley, John, M.D., F.L.S., Physician to, and Lecturer on Clinical Medicine at, St. Thomas's Hospital: 39 Brook Street, Grosvenor Square, W. (C. 1875.)
1872	Harris, Henry, M.D.: Trengweath, Redruth, Cornwall.
1881	Harrison, Charles Edward, M.B., Grenadier Guards Hospital, Rochester Row, S.W.
Orig Memb	Hart, Ernest: 38 Wimpole Street, Cavendish Square, W. (C. 1867–8.)
1869	Haward, J. Warrington: *Hon. Secretary*), Surgeon to St. George's Hospital (16 Savile Row, Burlington Gardens, W. (C. 1876–8, S. 1881.).
Orig Memb	Heath, Christopher (*Treasurer*), Surgeon to University College Hospital, and Holme Professor of Clinical Surgery in University College: 36 Cavendish Square, W. (C. 1867–71, V.P. 1876–8, T. 1879–81.)
1879	Henderson, George Courtenay, M.B.: London Fever Hospital, Liverpool Road, N.
1868	†Heslop, Thomas Pretious, M.D., Physician to the Children's Hospital, Birmingham.
1868	Hewan, Archibald, M.D.: 9 Chester Square, S.W.
Orig Memb	Hewett, Prescott Gardner, F.R.S., Surgeon Extraordinary to H.M. the Queen; Consulting Surgeon to St. George's Hospital: 1 Chesterfield Street, Mayfair, W. (V.P. 1869–71, P. 1873–4.)
Orig Memb	Hewitt, Graily, M.D., Professor of Midwifery in University College, and Obstetric Physician to University College Hospital: 36 Berkeley Square, W. (C. 1878–9.)
Orig Memb	Hicks, J. Braxton, M.D., F.R.S., F.L.S., Physician Accoucheur to, and Lecturer on Midwifery and the Diseases of Women and Children at, Guy's Hospital: 24 George Street, Hanover Square, W. (C. 1875–7.)
1868	Hill, Berkeley, M.B., Professor of Clinical Surgery in University College, London, Surgeon to University College Hospital, and Surgeon to the Lock Hospital: 55 Wimpole Street, W. (C. 1870–1.)
1874	Holderness, William Brown: 15 Park Street, Windsor.
1868	†Holman, Constantine, M.D.: Reigate, Surrey.
1868	Holman, William Henry, M.B.: 68 Adelaide Road, South Hampstead, N.W.
Orig Memb	Holmes, Timothy, Surgeon to, and Lecturer on Surgery at, St. George's Hospital; Surgeon-in-Chief to the Metropolitan Police Force: 18 Great Cumberland Place, Hyde Park, W. (C. 1867–9, V.P. 1873–5.)

ELECTED

Orig Memb HOLT, BARNARD WIGHT, Consulting Surgeon to, and Lecturer on Clinical Surgery at, the Westminster Hospital; Medical Officer of Health for Westminster: 14 Savile Row, W.

Orig Memb HOLTHOUSE, CARSTEN. (C. 1870–2.)

1878 HOOD, DONALD WILLIAM CHARLES, M.D.: 43 Green Street, Park Lane, W.

1873 HOPE, WILLIAM, M.D., Senior Physician to Queen Charlotte's Lying-in Hospital: 56 Curzon Street, Mayfair, W.

1871 HOUGHTON, HENRY G.: 6 Mount Street, Grosvenor Square, W.

1878 HOUGHTON, WALTER B., M.D., Assistant Physician to Charing Cross Hospital: 26 Cavendish Square, W.

1880 HOVELL, T. MARK: 3 Mansfield Street, Portland Place, W.

1876 HOWSE, HENRY GREENWAY, M.S. (C.), Surgeon to, and Lecturer on Anatomy at, Guy's Hospital; Surgeon to the Evelina Hospital for Sick Children: 10 St. Thomas's Street, S.E. (C. 1881.)

Orig Memb HULKE, JOHN WHITAKER, F.R.S., Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital, and Surgeon to the Royal London Ophthalmic Hospital: 10 Old Burlington Street, W. (C. 1867–9, V.P. 1878–80.)

Orig Memb HUMPHRY, GEORGE MURRAY, M.D., F.R.S., Professor of Anatomy in the University of Cambridge, and Surgeon to Addenbrooke's Hospital, Cambridge. (V.P. 1867–70.)

Orig Memb HUTCHINSON, JONATHAN, Surgeon to, and Lecturer on Surgery at, the London Hospital; Surgeon to the Hospital for Diseases of the Skin, and Surgeon to the Royal London Ophthalmic Hospital: 15 Cavendish Square, W. (C. 1867–8, V.P. 1875–6.)

1879 INKSON, JAMES, M.D., Surgeon-Major, Army Medical Department: 15 Prospect Row, Brompton, Chatham.

Orig Memb JACKSON, J. HUGHLINGS, M.D., Physician to, and Lecturer on Physiology at, the London Hospital; Physician to the National Hospital for the Paralysed and Epileptic: 3 Manchester Square, W. (C. 1872–3.)

1877 JACOBSON, WALTER HAMILTON ACLAND, M.B., Assistant Surgeon to Guy's Hospital: 41 Finsbury Square.

ELECTED

Orig Memb JENNER, Sir WILLIAM, Bart., M.D., K.C.B., D.C.L., LL.D., F.R.S., Physician in Ordinary to H.M. the Queen and to H.R.H. the Prince of Wales; Consulting Physician to University College Hospital: 63 Brook Street, W. (V.P. 1867–70, P. 1875–6.)

1875 JESSETT FREDERICK BOWREMAN: Pier Road, Erith, Kent.

Orig Memb JOHNSON, GEORGE, M.D., F.R.S., Physician to King's College Hospital: 11 Savile Row, W. (V.P. 1874–6.)

1878 JOHNSTON, WILLIAM, M.D., M.C.: 16 Lonsdale Terrace, Upper Kent Street, Leicester.

Orig Memb JONES, SYDNEY, M.B., Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital: 16 George Street, Hanover Square, W. (C. 1867–8.)

1872 JONES, THOMAS RIDGE, M.D., Assistant Physician, Victoria Hospital for Sick Children: 4 Chesham Place, Belgrave Square, S.W.

1876 JORDAN, FURNEAUX, Surgeon to the Queen's Hospital Birmingham: 22 Colmore Row, Birmingham.

1878 KEETLEY, CHARLES ROBERT BELL, Assistant Surgeon to the West London Hospital: 24 Manchester Street, W.

Orig Memb KELLY, CHARLES, M.D., Medical Officer of Health for the West Sussex District: Worthing, Sussex.

1878 LACEY, THOMAS WARNER: 196 Burrage Road, Plumstead, S.E.

1873 LACY, C. DE LACY: 5 Ovington Square, Brompton.

1868 LANGMORE, JOHN C., M.B.: 20 Oxford Terrace, Hyde Park, W. (C. 1872–5.)

Orig Memb LANGTON, JOHN, Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital, and Surgeon to the City of London Truss Society: 2 Harley Street, W. (C. 1878–80.)

1869 LAWRENCE, JAMES E.: Geraldine Lodge, East Hill, Wandsworth, S.W.

Orig Memb LAWSON, GEORGE (V.P.), Surgeon to, and Joint Lecturer on Surgery at, the Middlesex Hospital, and Surgeon to the Royal London Ophthalmic Hospital: 12 Harley Street, W. (S. 1871–3, C. 1874–6, V.P. 1881.)

1877 LEDIARD, HENRY AMBROSE, M.D., Surgeon to the Cumberland Infirmary: 78 Lowther Street, Carlisle.

Orig Memb LEE, HENRY, Consulting Surgeon to St. George's Hospital: 9 Savile Row, W. (V.P. 1870–2.)

1874 LEE, ROBERT JAMES, M.D., Assistant Physician to the Hospital for Sick Children: 6 Savile Row, W.

ELECTED

1877 LEES, DAVID B., M.D., Physician (with charge of out-patients) to, and Lecturer on Materia Medica at, St. Mary's Hospital, and Assistant Physician to the Hospital for Sick Children: 2 Thurloe Houses, Thurloe Square, S.W.

1879 LICHTENBERG, GEORGE, M.D.: 47 Finsbury Square.

1878 LISTER, JOSEPH, D.C.L., LL.D., F.R S. (*President*), Professor of Clinical Surgery at King's College, and Surgeon to King's College Hospital: 12 Park Crescent Regent's Park, W. (P. 1881.)

1868 LITTLE, LOUIS STROMEYER: China.

1875 LIVEING, EDWARD, M.D.: 52 Queen Anne Street, Cavendish Square, W.

1872 LIVEING, ROBERT, M.D., Lecturer on Dermatology, and Physician to the Skin Department at the Middlesex Hospital: 11 Manchester Square, W.

1878 LLOYD, ROBERT HODGENS, M.D., Medical Superintendent, Lambeth Infirmary, S.W.

1876 LONGHURST, ARTHUR EDWIN TEMPLE, M.D.: 22 Wilton Street, Grosvenor Place, S.W.

1881 LUBBOCK, MONTAGU, M.D.: 19 Grosvenor Street, W.

1876 LUCAS, R. CLEMENT, M.B., B.S., Senior Assistant Surgeon to, and Demonstrator of Operative and Practical Surgery at, Guy's Hospital: 18 Finsbury Square, E.C.

1879 LUNN, JOHN REUBEN, Resident Medical Officer: New Marylebone Infirmary, Rackham Street, Ladbroke Grove Road, Notting Hill, W.

1880 LYELL, ROBERT, Assistant Surgeon to the Middlesex Hospital: 26 Harley Street, Cavendish Square.

1871 MACCORMAC, WILLIAM, Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital: 13 Harley Street, W. (C. 1877–9.)

1881 MCHARDY, MALCOLM MACDONALD, Ophthalmic Surgeon to King's College Hospital: 5 Savile Row, W.

Orig Memb MACKENZIE, MORELL, M.D., Physician to the Hospital for Diseases of the Throat: 19 Harley Street, Cavendish Square, W.

1879 MACKENZIE, STEPHEN, M.D., Physician (with charge of out-patients) to, and Lecturer on Medicine at, the London Hospital: 26 Finsbury Square, E.C.

1879 MACLAGAN, THOMAS JOHN, M.D.: 9 Cadogan Place, Belgrave Square, S.W.

1875 MACNAMARA, CHARLES (C.), Surgeon to the Westminster Hospital: 13 Grosvenor Street, W. (C. 1879–81.)

ELECTED

1879 MAGILL, JAMES, M.D., M.C., Surgeon, Coldstream Guards: Coldstream Guards Hospital, Vincent Square, Westminster, S.W.

1874 MAHOMED, FRED. AKBAR, M.D., Medical Registrar, Guy's Hospital: 12 St. Thomas's Street, Southwark, S.E.

1881 MAKINS, GEORGE HENRY: Blackheath Park, S.E.

Orig Memb †MARCET, WILLIAM, M.D., F.R.S.: Villa Bianca, Canees, and 39 Grosvenor Street, W. (C. 1867–9.)

1868 MARSH, F. HOWARD, Assistant Surgeon to St. Bartholomew's Hospital: 36 Bruton Street, Berkeley Square, W. (C. 1876–7, 1881. S. 1878–80.)

1875 MARSHALL, F. J., Resident Medical Officer, St. George's Hospital, W.

1868 †MAY, EDWARD HOOPER, M.D.: High Cross, Tottenham, Middlesex, N.

1868 MEADOWS, ALFRED, M.D., Physician Accoucheur to, and Lecturer on Midwifery at, St. Mary's Hospital: 27 George Street, Hanover Square, W. (C. 1871–4.)

1876 MELLADEW, H. F. L., M.D., Surgeon, Royal Horse Guards: Cavalry Barracks, Windsor.

1878 MEREDITH, WILLIAM APPLETON, M.B., C.M., Assistant Surgeon to the Samaritan Free Hospital for Women and Children: 14 Old Burlington Street, W.

1873 MICKLE, WILLIAM JULIUS, M.D., Physician Superintendent, Grove Hall Asylum, Bow, E.

1877 MILNER, EDWARD, Surgeon to the Lock Hospital: 32 New Cavendish Street, Portland Place, W.

1874 MORGAN, JOHN HAMMOND, Assistant Surgeon to the Charing Cross Hospital, and to the Hospital for Sick Children, Great Ormond Street: 12 Chapel Street, Park Lane, W.

1877 MORRIS, HENRY, M.B., Surgeon to, and Lecturer on Clinical Surgery at, the Middlesex Hospital: 2 Mansfield Street, Portland Place, W.

1877 MORRIS, MALCOLM ALEX., Lecturer on Skin Diseases at St. Mary's Hospital: 63 Montagu Square, W.

1879 MOULLIN, CHARLES W. MANSELL: 80 Porchester Terrace, Bayswater.

Orig Memb MOXON, WALTER, M.D., F.L.S., Physician to, and Lecturer on Materia Medica at, Guy's Hospital: 6 Finsbury Circus, E.C. (C. 1874–6.)

1878 MUIR, JAMES C. P.: 44 Cornwall Road, Westbourne Park, W.

Elected	
1875	Murphy, Shirley F.: 19 North Villas, Camden Square, N.W.
1868	Myers, Arthur Bowen Richards, Surgeon to 1st Battalion of the Coldstream Guards: Vincent Square, Westminster, S.W. (C. 1877–9.)
1873	Myrtle, Andrew S., M.D.: Harrogate.
1874	Nankivell, Arthur Wolcot, Resident Surgeon, St. Bartholomew's Hospital, Chatham.
1875	Nettleship, Edward (C.), Ophthalmic Surgeon to, and Lecturer on Ophthalmology at, St. Thomas's Hospital: 4 Wimpole Street, Cavendish Square, W. (C. 1881.)
Orig Memb	Norton, Arthur Trehern, Surgeon to, and Lecturer on Anatomy at, St. Mary's Hospital: 6 Wimpole Street, W. (C. 1874–6.)
Orig Memb	Nunn, Thomas William, Consulting Surgeon to the Middlesex Hospital: 8 Stratford Place, Oxford Street, W. (C. 1873–4.)
1880	O'Connor, Bernard, M.D.: 40 Brook Street, Grosvenor Square, W.
Orig Memb	Ogle, John William, M.D., Consulting Physician to St. George's Hospital: 30 Cavendish Square, W. (C. 1867–8.)
1868	†Ogle, William, M.D., Physician to the Derbyshire General Infirmary: 98 Friar Gate, Derby.
1869	Oldfield, E., M.D.: Surinam.
1868	Oppert, Francis, M.D.: Germany.
1877	Ord, William Miller, M.D., Physician to, and Lecturer on Medicine at, St. Thomas's Hospital: 7 Brook Street, Hanover Square, W.
1876	Ottley, Walter, M.B., late Demonstrator of Anatomy at University College: 93 Ladbroke Grove, Notting Hill, W.
1877	Owen, Isambard, M.B., Medical Registrar, St. George's Hospital: 41 Gloucester Gardens, Bishop's Road, W.
1875	Page, Herbert W., M.C., M.B., Surgeon (with charge of out patients) to St. Mary's Hospital: 146 Harley Street, W.
Orig Memb	Paget, Sir James, Bart., D.C.L., LL.D., F.R.S., Sergeant-Surgeon Extraordinary to H.M. the Queen; Surgeon in Ordinary to H.R.H. the Prince of Wales; Consulting Surgeon to St. Bartholomew's Hospital: 1 Harewood Place, Hanover Square, W. (V.P. 1867–8, P. 1869–70.)
1873	Parker, Robert William, Assistant Surgeon, East London Children's Hospital: 8 Old Cavendish Street, W.

ELECTED

1881 PARKER, RUSHTON, M.B., Assistant Surgeon, Liverpool Royal Infirmary: 69 Rodney Street, Liverpool.

Orig Memb PAVY, FREDERICK WILLIAM, M.D., F.R.S., Physician to, and Lecturer on Medicine at, Guy's Hospital: 35 Grosvenor Street, W. (C. 1869–71.)

Orig Memb PEACOCK, THOMAS BEVILL, M.D., Consulting Physician to St. Thomas's Hospital; Consulting Physician to the City of London Hospital for Diseases of the Chest: 20 Finsbury Circus, E.C. (C. 1867–8, V.P. 1869–71.)

1879 PERL, ROBERT: 130 Collins Street East, Melbourne, Victoria.

1874 PHILLIPS, CHARLES DOUGLAS F., M.D., Lecturer on Materia Medica at the Westminster Hospital: 2 Grosvenor Square, W.

Orig Memb PICK, THOMAS PICKERING, Surgeon to, and Lecturer on Anatomy at, St. George's Hospital; Surgeon to the Belgrave Hospital for Children: 13 South Eaton Place, Eaton Square, S.W. (S. 1874–7, C. 1878–80.)

1871 †PLAYNE, ALFRED, M.B.: Maidenhead.

1875 POLLOCK, GEORGE DAVID, Surgeon in Ordinary to H.R.H. the Prince of Wales; Consulting Surgeon to St. George's Hospital: 36 Grosvenor Street, W.

1868 POLLOCK, JAMES EDWARD, M.D., Physician to the Hospital for Consumption and Diseases of the Chest: 52 Upper Brook Street, Grosvenor Square, W. (C. 1878–80.)

1871 POORE, GEORGE VIVIAN, M.D. (C.), Assistant Physician to University College Hospital: 30 Wimpole Street, W. (C. 1879–81.)

1873 PORT, HEINRICH, M.D., Physician to the German Hospital: 48 Finsbury Square, E.C.

Orig Memb POWELL, R. DOUGLAS, M.D., Physician to the Hospital for Consumption and Diseases of the Chest, Brompton; Assistant Physician to the Middlesex Hospital: 15 Henrietta Street, Cavendish Square, W. (C. 1874–6.)

1868 PRENTIS, CHARLES, Surgeon-Major, Bengal Medical Service: India.

Orig Memb QUAIN, RICHARD, M.D., F.R.S., Consulting Physician to the Hospital for Consumption and Diseases of the Chest: 67 Harley Street, W. (C. 1867–9.)

Orig Memb RAMSKILL, J. SPENCE, M.D., Consulting Physician to, and Lecturer on Medicine at, the London Hospital; Senior Physician to the National Hospital for the Paralysed and Epileptic: 5 St. Helen's Place, Bishopsgate Street, E.C.

1873 RANSFORD, GIFFORD: 27 Gloucester Place, Hyde Park, W.

ELECTED

1868 RASCH, ADOLPHUS A., M.D., Physician for Diseases of Women to the German Hospital: 7 South Street, Finsbury Square, E.C.

1877 RAYNER, HENRY, M.D., Lecturer on Mental Diseases at St. Thomas's Hospital: Middlesex County Lunatic Asylum, Hanwell, W.

1874 REE, FREDERICK G.: Royal India Asylum, Ealing, W.

Orig Memb REES, GEORGE OWEN, M.D., F.R.S., Consulting Physician to Guy's Hospital: 26 Albemarle Street, Piccadilly, W. (V.P. 1871–3.)

1868 REEVES, HENRY A., Assistant Surgeon to the London Hospital: 6 Grosvenor Street, W.

Orig Memb REYNOLDS, JOHN RUSSELL, M.D., F.R.S., Consulting Physician to University College Hospital: 38 Grosvenor Street, W. (C. 1867–8.)

1868 RICE, MICHAEL W., M.D.: 34 Cadogan Place, S.W. (C. 1876–8.)

Orig Memb RINGER, SYDNEY, M.D., Professor of the Principles and Practice of Medicine in University College, and Physician to University College Hospital: 15 Cavendish Place, W. (C. 1871–2.)

1877 RIVINGTON, WALTER, M.S., M.B., Surgeon to, and Lecturer on Anatomy at, the London Hospital: 22 Finsbury Square, E.C.

1873 †ROBERTS, DAVID LLOYD, M.D., Physician to St. Mary's Hospital, Manchester: 23 St. John Street, Manchester.

1875 ROGERS, WILLIAM RICHARD, M.D.: 56 Berners Street, Oxford Street, W.

1877 ROTH, BERNARD M. S.: 48 Wimpole Street, W., and 18 Grand Parade, Brighton.

Orig Memb ROUSE, JAMES, Surgeon to St. George's Hospital, and to the Royal Ophthalmic Hospital, Charing Cross: 2 Wilton Street, Grosvenor Place, S.W. (C. 1875–7.)

1874 ROWLAND, EDWARD R.: Pelham Lodge, Isleworth.

1868 SANDERSON, HUGH JAMES, M.D.: 26 Upper Berkeley Street, W.

Orig Memb SANDERSON, JOHN BURDON, M.D., F.R.S., Jodrell Professor of Human Physiology in University College: 26 Gordon Square, W.C. (S. 1867–9, C. 1870, V.P. 1871–3.)

1878 SANGSTER, ALFRED, M.B., Lecturer on Skin Diseases at the Charing Cross Hospital: 7 Old Burlington Street, W.

1873 SAVAGE, GEORGE HENRY, M.D.: Bethlem Royal Hospital, St. George's Road, S.E.

Elected	
1877	Seaton, Edward, M.D., Physician to the Nottingham General Dispensary: 8 Oxford Street, Nottingham.
1869	Sedgwick, Leonard William, M.D. (C.): 2 Gloucester Terrace, Hyde Park, W. (C. 1879–81.)
1878	Semon, Felix, M.D.: 59 Welbeck Street, Cavendish Square, W.
1875	Sherwood, Arthur Paul: Eastbourne.
1876	Shuter, James L., M.B.: St. Bartholomew's Hospital, and Lawn House, Tufnell Park Road, Holloway, N.
Orig Memb	Sibley, Septimus William: 7 Harley Street, Cavendish Square, W. (C. 1871–4.)
Orig Memb	Simon, John, C.B., D.C.L., F.R.S., Consulting Surgeon to St. Thomas's Hospital: 40 Kensington Square, W. (V.P. 1867–70.)
1873	Simpson, George A. Malcolm, M.D., C.M.: Hampstead Lane, Highgate, N.
1879	Skerritt, Edward Markham, M.D.: Coburg Villa, Richmond Hill, Clifton, Bristol.
1877	Skinner, William A., 45 Lower Belgrave Street, Eaton Square, S.W.
1872	Slight, George, M.D.: 25 Brewer Street, Regent Street, W.
1875	Smith, Gilbart, M.A., M.D., Assistant Physician to the London Hospital; Physician to the Royal Hospital for Diseases of the Chest, City Road: 68 Harley Street, Cavendish Square, W.
1868	Smith, Heywood, M.D., Physician to the Hospital for Women, and Physician to the British Lying-in Hospital: 18 Harley Street, Cavendish Square. W.
1868	Smith, Protheroe, M.D., Physician to the Hospital for Women: 42 Park Street, Grosvenor Square, W.
Orig Memb	Smith, Thomas (V.P.), Surgeon to, and Lecturer on Clinical Surgery at, St. Bartholomew's Hospital, and Surgeon to the Hospital for Sick Children: 5 Stratford Place, Oxford Street, W. (C. 1869–71, V.P. 1880–81.)
1873	Smith, William Johnson, Surgeon to the Seamen's Hospital, Greenwich, S.E.
1873	Smith, William Wilberforce, M.D.: 2 Eastbourne Terrace, Bishop's Road, W.
1868	Snow, William V., M.D.: Richmond Gardens, Bournemouth.
Orig Memb	Southey, Reginald, M.D., Physician to, and Lecturer on Forensic Medicine and Hygiene at, St. Bartholomew's Hospital: 6 Harley Street, Cavendish Square, W. (C. 1867–70, 1876–8, S. 1873–5.)

Elected	
1876	Squire, Balmanno, M.B.: 24 Weymouth Street, Portland Place, W.
1879	Staples, Francis Patrick, Assistant Professor of Military Surgery, Netley: Army Medical Department, Royal Victoria Hospital, Netley; and Junior Army and Navy Club, Grafton Street, Piccadilly.
1881	Startin, James: 16 Sackville Street, Piccadilly, W.
Orig Memb	Stewart, Alexander Patrick, M.D., Consulting Physician to the Middlesex Hospital: 75 Grosvenor Street, W. (V.P. 1872–4.)
1871	Stewart, William Edward: 16 Harley Street, Cavendish Square, W.
1874	Stirling, Edward C., M.D., late Assistant Surgeon to, and Lecturer on Physiology at, St. George's Hospital: Adelaide, South Australia.
1878	Stokes, William, M.D., Professor of Surgery, Royal College of Surgeons, Ireland; Surgeon to the Richmond Surgical Hospital: 5 Merrion Square North, Dublin.
1878	Strugnell, Frederick William, 45 Highgate Road, Highgate, N.
1878	Sturge, William Allen, M.D., Assistant Physician to the Royal Free Hospital: Nice, Alpes Maritimes, France.
1872	Sutherland, Henry, M.D., Lecturer on Insanity, Westminster Hospital: 6 Richmond Terrace, Whitehall, S.W.
1868	Sutro, Sigismund, M.D., Senior Physician to the German Hospital: 37A Finsbury Square, E.C.
Orig Memb	Sutton, Henry Gawen, M.B., Physician to, and Lecturer on Pathology at, the London Hospital, and Physician to the City of London Hospital for Diseases of the Chest: 9 Finsbury Square, E.C. (C. 1878.)
1876	Symonds, Horatio P.: 35 Beaumont Street, Oxford.
1868	Tatham, John, M.D., Assistant Physician to the Hospital for Consumption and Diseases of the Chest: 12 George Street, Hanover Square, W.
1878	Tayler, Francis Thomas, B.A., M.B.: 224 Lewisham High Road, S.E.
1875	Taylor, Frederick, M.D. (*Hon. Secretary*), Assistant Physician to Guy's Hospital: 15 St. Thomas's Street, Southwark, S.E. (S. 1879–81.)
Orig Memb	Teevan, William F. (C.), Surgeon to the West London Hospital: 10 Portman Square, W. (C. 1880-81.)

ELECTED

Orig Memb THOMPSON, EDMUND SYMES, M.D. (C.), Physician to the Hospital for Consumption and Diseases of the Chest; Gresham Professor of Medicine: 33 Cavendish Square, W. (C. 1880-81.)

Orig Memb THOMPSON, Sir HENRY, Knt., Surgeon Extraordinary to H.M. the King of the Belgians; Emeritus Professor of Clinical Surgery in University College: 35 Wimpole Street, W. (C. 1867–8.)

Orig Memb THOMPSON, HENRY, M.D., Fellow of St. John's College, Cambridge; Consulting Physician to the Middlesex Hospital: 53 Queen Anne Street, W. (V.P. 1875–7.)

1872 THORNTON, WILLIAM PUGIN, Surgeon to the Hospital for Diseases of the Throat; Surgeon to the Marylebone Dispensary: 42 Devonshire Street, Portland Place, W.

1876 THRUPP, JAMES GODFREY.

1877 TIBBITS, HERBERT, F.R.C.P. Ed.: 68 Wimpole Street, Cavendish Square, W.

1874 TRAVERS, WILLIAM, M.D.: 2 Phillimore Gardens, Kensington, W.

1877 TWEEDY, JOHN, Professor of Ophthalmic Medicine and Surgery at University College, and Assistant Ophthalmic Surgeon to University College Hospital; Assistant Surgeon to the Royal London Ophthalmic Hospital: 24 Harley Street, Cavendish Square, W.

1878 TYSON, WILLIAM JOSEPH, M.D.: 89 Sandgate Street, Folkestone.

1868 VENNING, EDGCOMBE: 87 Sloane Street, S.W. (C. 1876–8.)

1876 WADHAM, WILLIAM, M.D., Physician to, and Lecturer on Clinical Medicine at, St. George's Hospital: 14 Park Lane, W.

1868 WAGSTAFFE, WILLIAM WARWICK, Assistant Surgeon to St. Thomas's Hospital. (C. 1878.)

1869 WALKER, JOSEPH, Dental Surgeon to the Westminster Hospital: 22 Grosvenor Street, W.

1875 WALSHAM, WILLIAM J., Demonstrator of Anatomy and Operative Surgery at St. Bartholomew's Hospital; Surgeon to the Metropolitan Free Hospital and to the Royal Hospital for Diseases of the Chest: 27 Weymouth Street, Portland Place, W.

1870 WARWICK, RICHARD ARCHER, M.D., Surgeon to the Richmond Infirmary: 5 Hill Rise, Richmond, S.W.

1876 WATERS, JOHN H., M.D.: 101 Jermyn Street, St. James's, S.W.

1868 WATKINS, EDWIN T., M.D. (C.): 61 Guilford Street, W.C. (C. 1881.)

ELECTED

Orig Memb WATSON, WILLIAM SPENCER, M.B. (C.), Surgeon to the Great Northern Hospital; Surgeon to the Royal South London Ophthalmic Hospital: 7 Henrietta Street, Cavendish Square, W. (C. 1880–81.)

1879 WATTEVILLE, ARMAND DE, M.A., B.Sc. Medical Electrician to St. Mary's Hospital: 13 Old Cavendish Street, W.

Orig Memb WEBER, HERMANN, M.D., Physician to the German Hospital: 10 Grosvenor Street, W. (C. 1867–71, V.P. 1873–5.)

1876 WEIR, ARCHIBALD, M.D.: St. Mungho's, Great Malvern.

1868 WELLS, THOMAS SPENCER, Surgeon in Ordinary to H.M.'s Household; Surgeon to the Samaritan Free Hospital: 3 Upper Grosvenor Street, W. (C. 1873.)

1874 WHEELHOUSE, CLAUDIUS GALEN, Senior Surgeon to the Leeds General Infirmary, and Lecturer on Surgery, Leeds Medical School: Hilary Place, Leeds.

1868 WHIPHAM, THOMAS TILLYER, M.B., Physician to, and Lecturer on Clinical Medicine at, St. George's Hospital: 11 Grosvenor Street, Grosvenor Square, W. (C 1878–80.)

1874 WHISTLER, W. M., M.D.: 28 Wimpole Street.

1871 WIGHT, GEORGE, M.B., C.M.: 428 Liverpool Road, N.

1879 WILCOX, HENRY, M.B.: 170 Lewisham High Road, S.E.

Orig Memb WILKS, SAMUEL, M.D., F.R.S., Physician to, and Lecturer on Medicine at, Guy's Hospital: 72 Grosvenor Street, W. (C. 1871–2.)

Orig Memb WILLETT, ALFRED, Surgeon to St. Bartholomew's Hospital: 36 Wimpole Street, W. (C. 1872–5.)

Orig Memb WILLIAMS, CHARLES THEODORE, M.D., Physician to the Hospital for Consumption and Diseases of the Chest: 47 Upper Brook Street, Grosvenor Square, W. (C. 1877–9.)

1881 WILLIAMS, JOHN, M.D., Assistant Obstetric Physician to University College Hospital: 28 Harley Street, Cavendish Square, W.

1870 WILLIAMS, WILLIAM RHYS, M.D., Commissioner in Lunacy: 19 Whitehall Place, S.W.

1876 WILLIAMSON, JAMES MANN, M.D.: Ventnor, Isle of Wight.

Orig Memb WILLIS, FRANCIS, M.D.: Braceborough, Stamford.

1868. WILTSHIRE, ALFRED, M.D. (C.), Joint Lecturer on Obstetrics, and Assistant Physician-Accoucheur, St. Mary's Hospital: 57 Wimpole Street, W. (C. 1880–81.)

ELECTED

1880 WOOD, JOHN, F.R.S., Professor of Clinical Surgery in King's College, London, and Senior Surgeon to King's College Hospital; 61 Wimpole Street, Cavendish Square, W.

1879 WOODWARD, GEORGE P. M., M.D., Deputy Surgeon-General: Clarendon House, Norwood Road, Tulse Hill.

1872 YEO, J. BURNEY, M.D. (C.), Physician to King's College Hospital; Assistant Physician to the Brompton Hospital for Consumption: 44 Hertford Street, Mayfair, W. (C. 1881.)

REPORT

OF THE

COUNCIL OF THE CLINICAL SOCIETY.

DECEMBER 1880.

IN offering a retrospect of the past Session the Council is able to point to many signs of the continued prosperity and development of the Clinical Society.

The number of resident members is 267. Of these fifteen have been elected during the past year. Of non-resident members there are fifty-eight, of whom four were recently elected. Thus the total number amounts to 325.

The losses which the Society has sustained by death during the past year comprise the names of Mr. J. Soelberg Wells, who held a distinguished position as an Ophthalmic Surgeon, and who was a member of the Council during 1875–77; Mr. A. Leggatt, who had presented two interesting communications to the Society; and two younger members, Dr. J. Pearson Irvine and Mr. Edward Amphlett, who held the offices respectively of Assistant-Physician and Assistant-Surgeon to the Charing Cross Hospital.

After all monetary liabilities have been met there remains a balance at the bankers' of 131*l.* 14*s.* 7*d.*, and a further sum of 500*l.* is invested in Three per Cent. Consols.

The volume of 'Transactions' recently issued is not only the largest, but the Council believes the best that has yet been published. The number of communications which it contains amounts to sixty—a considerable increase on the totals of other years. Many, while they maintain a strictly Clinical

character, are elaborate, and form important contributions to our general knowledge on the subjects of which they treat. Twelve chromo-lithographic illustrations and four woodcuts have been introduced, and these, it is hoped, will be found to add much to the clearness, and thus to the value of many of the papers.

Its increased size, and the number and character of the illustrations which it contains, have combined to render the production of the volume unusually expensive. The Council, however, anticipates that the result will be thought amply to justify a comparatively large outlay.

The general index to the first twelve volumes, the preparation of which was mentioned in last year's report, has been issued.

The regulations introduced last year, providing for the exhibition of living specimens in the anteroom before and after the meetings, have appeared to work satisfactorily.

A large number of important cases have been brought under the notice of members, and, as the papers relative to these cases have been read only at subsequent meetings, any disarrangement of the previously announced business of the meeting has been avoided.

Several Sub-Committees, appointed to consider special subjects, have been at work during the year. The Committees on Leprosy, on Keloid and its connection with Syphilis, and on the effects of Chloral in long-continued Courses, have presented their reports. The Committee on Hyperpyrexia delays its report, as a sufficient number of cases on which to found a conclusion have not yet come under observation. It was hoped the report of the Committee on Hip Disease would have been ready for presentation. Although, however, it is in a very forward state, it has been found necessary to postpone it for a short time in order to render it complete.

CLINICAL SOCIETY OF LONDON.—BALANCE SHEET 1879–80.

		£	s.	d.			£	s.	d.
1880	To balance from last account . . .	212	12	11	1880	By cost of printing, binding, and delivering Index to 'Transactions'	48	6	0
	„ Arrears of subscriptions 1878–79 . .	2	2	0		„ Delivery of Vol. XII. of 'Transactions' .	3	15	0
	„ 252 Subscriptions 1879–80 . . .	264	12	0		„ Cost of printing and binding Vol. XIII. .	166	15	6
	„ 15 Admission fees of resident members .	31	10	0		„ „ illustrating Vol. XIII. . . .	60	16	0
	„ 4 Admission fees of non-resident members	8	8	0		„ Payment to Royal Medical and Chirurgical Society for use of rooms . .	47	5	0
	„ Dividends on £500 Consols . . .	14	13	10		„ Refreshments and attendants at meetings .	31	10	0
	„ Sale of 'Transactions' by Society . .	0	7	6		„ Payment to R. Coldrey	5	0	0
	„ „ „ by Messrs. Longmans	20	14	4		„ Printing, stationery, and postage . .	10	18	9
						„ Hire of microscopes	1	12	6
						„ Mr. Wheatley for compiling general index .	20	0	0
						„ „ „ secretarial work . .	8	8	0
						„ „ „ collection of subscriptions	10	15	6
						„ Cost of advertising, and Messrs. Longmans' commission on sale of 'Transactions' .	7	12	6
						„ Cost of power of attorney and transfer .	0	11	3
						Balance at Society's bankers . . .	131	14	7
		£555	0	7			£555	0	7

Amount of Stock standing in the names of the Trustees, January 1, 1881, £500 3 per cent. Consols.

CHRISTOPHER HEATH, *Treasurer.*

Audited and found correct { T. STRETCH DOWSE, N. DAVIES-COLLEY, } *Auditors.*

HOWARD MARSH, *Hon. Sec.*

PRESIDENT'S ADDRESS.

GENTLEMEN,—In thanking you for the great honour which you have conferred upon me by my election to this chair, I do so with a peculiar feeling of gratitude, because I am well aware that my personal share in the proceedings of the Society has not been such as to entitle me to hope for so great a distinction at your hands. I can only strive to discharge to the best of my ability the important duties which your kindness has imposed.

In considering the choice of a subject for the inaugural address which is expected from your President, I have felt myself precluded from presenting a summary of the labours of the Society in the past, or from tendering advice as to its conduct in the future, and, after consultation with some influential members of the Council, I have decided to bring before you this evening a special subject, which will, I trust, be thought not unworthy of the occasion, inasmuch as, while it is still in an unsettled or transitional state, it is full of interest for every practical surgeon, and at the same time, in some of its aspects, well deserves the attention of the pathologist and the physician—I refer to the catgut ligature. In adopting this course I feel it needful to crave your indulgence; for the subject is a large one, and, in order to do it anything like justice, I shall have to trespass for a considerable time on your attention.

The catgut ligature has in some respects exceeded my original hopes. I feared that its advantages would be limited to wounds in which putrefaction was avoided, and that, if septic suppuration took place in a wound in which it was employed for securing the vessels, the ligatures would, sooner or later, come away like little sloughs. Such, however, has not proved to be the case. Whatever be the progress of the wound, we never see anything of the catgut; so that even surgeons who have not adopted strict antiseptic treat-

ment have been led to employ the new material in ordinary wounds. Under other circumstances, however, the catgut has often led to disappointment. We hear of cases in which the Cæsarian section has been performed, and all has gone on well until the knots of the catgut with which the uterine wound was secured have given way, and the patient's death has been the result. Again, in ligature of large arterial trunks in their continuity, several surgeons have met with bitter disappointment, the case ending in disaster from secondary hæmorrhage, or the treatment proving abortive through the channel of the vessel becoming opened up again at the site of the ligature. Hence many surgeons have been induced to return to silk, even though using strict antiseptic treatment—rendering the silk aseptic by steeping it in a suitable lotion, and cutting the ends short. This practice has, however, by no means proved uniformly successful. As an instance of unsatisfactory result, I may mention a case which was recorded by Mr. Clutton in the last volume of our 'Transactions.' He tied the external iliac artery with silk under strict antiseptic precautions, and the wound healed within a week; but, as I learned from a letter which he was good enough to send me at the time, 'six weeks after the operation a little blister formed, and fluid began to escape, forming a small scab, and in three months the loop which had been placed around the artery came away.' Such a result was not at all surprising to me, seeing that what induced me to try the animal ligature was the discovery of a small abscess about the remains of a partially absorbed silk thread which I had applied in the same manner as Mr. Clutton, and, as it so happened, to the same artery.* It can hardly be doubted that suppuration proceeding from the immediate seat of the ligature must be a source of danger. As an illustration of the mischief which a ligature of ordinary material may do, I may mention a case of goître in a young woman on whom I operated on the 28th of January last year. It was of moderate dimensions; but the effect on the respiration was so considerable, that I determined to remove it, following Dr. Patrick Heron Watson's plan of preliminary deligation of the thyroid vessels circumferentially to the tumour. If this be effectually done, the operation is bloodless; so that, as the laryngoscope applied by Dr. Felix Semon, who had recommended the case

* See 'Observations on Ligature of Arteries on the Antiseptic System,' 'The Lancet,' April 3rd, 1869.

to my care, showed that the anterior wall of the trachea was pressed backwards considerably by the growth, I adopted a measure which I believe would in all cases of removal of the thyroid prove advantageous, namely, after the preliminary deligation of the vessels, I divided the tumour in the middle line, so as, in the event of adhesion to the trachea, to be able to remove the two halves of the growth at leisure, dissecting it off from the trachea more or less completely as may be desired, leaving some portions at the adherent parts, and thus avoiding the deadly risk of perforation of the air-passage. But in order that the circumferential ligature of the thyroid vessels may be secure, it is essential that the material employed should be very strong, so that the tissues round about the tumour, including the vessels, may be thoroughly tightened up. I possessed no catgut which I felt was resistant enough to bear the full strength of my hands, and therefore I was compelled to use the hempen ligature—after, of course, carefully rendering it aseptic by means of carbolic lotion. Six of these hempen ligatures were used—three on each side. During the first eight days, everything went on in a typical fashion according to the antiseptic method. There was a merely serous effusion, rapidly diminishing in amount; and we looked to the wound being healed in a few days more. But on the ninth day there was seen to be a little something of purulence mingled with the discharge; and the pus afterwards became thicker, though always in small quantity; a little could be pressed out from each side; and in a month, one of the hempen ligatures made its escape. Six days later, four others of the hempen threads came away altogether unaltered, as may be seen on one of the cards on the table where I have exhibited them. I submitted them to careful examination. They had a sour odour, and, applied to litmus paper, gave an acid reaction, that is to say, the natural alkaline condition of the blood-serum had been changed to acidity by some peculiar species of fermentation. On examining them with the microscope, I found the interstices of the threads of the hemp loaded with a form of organism, to which I believe I happened to be the first to direct attention as to its mode of growth,* and to which I gave the name of Granuligera, occurring in groups of two, three, four, and so forth, as distinguished from the chains of ordinary bacteria, and of which one species at least has been since shown by Mr. Cheyne to occur very frequently in

* See 'Transactions of the Royal Society of Edinburgh,' vol. xxvii. 1875.

cases treated antiseptically, without any interference with aseptic progress. I found that the interstices of the threads of the hemp were loaded with these little micrococci. It so happens that I have had the opportunity, within the last few days, of obtaining a sample of these micrococci, thanks to Mr. Cheyne's kindness. He brought this flask, containing then a pure and perfectly transparent organic infusion, to a case which I had operated on a fortnight before by excision of the ankle. The skin had been unbroken, so that I was able to operate antiseptically, and the case pursued a perfectly typical course. The wounds, which were left gaping at the time of the operation, were filled with blood-clot, which remained unaltered in appearance, though undoubtedly organised by that time, more or less. A little piece of the blood-clot from one of these wounds was introduced with careful antiseptic precautions into the flask of clear fluid, and you see it is now turbid, and there is under the microscope on the table a specimen of the little organism to which the turbidity is due. But though, under ordinary circumstances, these micrococci may be present, as Mr. Cheyne has abundantly shown, and as the excision of the ankle I have just referred to illustrates, without causing any evil, yet there may be circumstances in which they may prove mischievous; and the case of goître which I have been relating appears to have been one of these. The micrococci, developing for a protracted period in the interstices of the hempen ligature, produced their special fermentation of the serum in its most aggravated form. The acid serum became a cause of irritation; and thus the ligatures, which otherwise, being unirritating in their own substance, might have become encapsuled, and in due time absorbed, became causes of suppuration. One of the six ligatures still remained unaccounted for. In due time we sent the patient home with a small sinus remaining, a little pus always discharging from it; but it was not until the middle of September that the last ligature came away, altogether unaltered. Now, gentlemen, there is no doubt whatever that, if I had had catgut which I could have trusted for the operation, the catgut ligatures would have been disposed of within two or three weeks, and the healing, instead of requiring eight months, would probably have been completed in a fortnight. Here, then, we have an illustration of the great disadvantage which may arise, even under antiseptic treatment, from the use of the ordinary forms of ligature.

Animal ligatures of another kind have been provided by Mr. Barwell, in order to remove these difficulties, namely, strips of the mingled yellow elastic and unstriped muscular tissues which constitute the arterial wall, obtained by cutting spirally the aorta of one of the larger animals. But, though fully admitting the efficiency of these ligatures in his hands, I am given to understand that their form and size render them by no means very convenient, and, independently of this, I cannot but feel that it is unsatisfactory, if it can be avoided, to have a special material for this particular object, and that it would be better, if possible, to have the catgut in a thoroughly reliable condition. Catgut, of which I have samples here, is to be had all over the world in abundance. It is beautifully strong and smooth; it is made of various sizes suitable for all surgical requirements, and is extremely cheap. Wholesale, it is sold at 12*s.* per gross, that is to say, one penny per hank. But, as it comes from the maker, it is entirely unfit for the purposes of the surgeon. However beautiful it is in the dry state, it becomes soft and pulpy soon after it has been placed in blood-serum. In one of these glasses is a piece of unprepared catgut which was placed in warm serum this morning, obtained from the blood of a cow, and within half an hour it was in the condition in which it is at the present time—swollen, soft, and pulpy. A knot tied upon it in its present state would hold as little or scarcely better than would one on a piece of the slippery intestine from which the catgut is derived. It is essential, in order to fit the catgut for the purposes of the surgeon, that it be altered in its physical constitution so as to be no longer liable to this softening effect by the serum of the blood. It is a remarkable circumstance that the blood-serum softens catgut even more than water does. It might have been expected, *à priori*, that a solution of a colloidal substance like albumen would have been much less disposed than water to permeate and soften an animal tissue like catgut; but it is otherwise, and therefore we cannot test the trustworthiness of catgut by steeping it in warm water, as I formerly used to do. In order to be sure that a given specimen will answer the purpose in so far as the knot is concerned, that it shall not slip, it is needful that we should steep it in blood-serum, a somewhat troublesome process, as it involves sending to a slaughter-house for blood.

The method of preparing catgut which I published long ago answers the purpose very well, even for the ligature of

arteries in their continuity, provided certain conditions be complied with; such, at least, is my own experience. This, indeed, has not been very extensive, but it has been sufficient to deserve consideration. I have tied altogether nine large arteries in their continuity with prepared catgut. Of these, one was a case of ligature of the carotid, in a young woman, aged 22, with a pulsating tumour below the angle of the jaw, in the situation of a carotid aneurism and with all the symptoms of that disease. The application of the ligature reduced to a certain degree the pulsation and the dimensions, but the further cure which we hoped for did not take place. She left the hospital with a pulsating tumour; and I heard only yesterday from the medical man under whose care she is in Scotland, that this tumour, for which I tied the carotid artery in 1874, still exists as a pulsating swelling, if anything, rather on the increase. But though, as regards the cure of the disease, the ligature was unsatisfactory, nothing could be more beautiful in its effect as respects the healing of the wound without suppuration, and the permanent obstruction of the vessel at the seat of ligature.

A case of traumatic arterio-venous aneurism of the temporal artery, in a young man lately under my care in King's College Hospital, may be mentioned in this category, partly because the greatly dilated condition which the naturally small artery had assumed brought it up towards the dimensions of a large trunk, and partly because the concurrent ligature of the largely dilated veins would, without antiseptic means, have been justly regarded as of considerable danger. The others were all cases of ligature of the femoral. Six were popliteal aneurisms. Four of these presented nothing deserving of special remark. One was a diffuse aneurism, extending up to the junction of the lower and middle thirds of the thigh, and the other was an enormous diffuse aneurism reaching up to Poupart's ligament, so that it was necessary for me to tie the femoral artery about the situation of the ordinary origin of the profunda, and even there my incision opened into the aneurismal clots.

The last case that remains to be mentioned was a large arterio-venous aneurism of the upper part of the femoral, of idiopathic origin. This case was of such special interest that I hope, on a future occasion, to make it the subject of a paper before this Society. In all these cases, except two, catgut prepared by the old method was employed, and in all these nine cases the result was satisfactory, and

recovery perfect, except as regards the poor young woman who has still the pulsating tumour in her neck.

As to the mode of applying the ligature, I have always used a single reef-knot with short-cut ends, tying it sufficiently tightly to cause the giving way of the internal and middle coats. This latter point is not, perhaps, essential, as I long ago surmised, and as Mr. Barwell's experience with his aortic bands appears to indicate. But if, as is the case with catgut, the form of the ligature admits of it, the injury done to the deeper tunics is, I believe, advantageous, by leading to a salutary corroborative process of repair.

Why, it may naturally be asked, has my own experience been more satisfactory with the catgut ligature than that of many other surgeons? There are, I believe, two reasons for this. One is that I have never ventured to tie an artery of considerable size in its continuity without having taken pains to ascertain that the catgut was of thoroughly reliable material; and the other reason is that I have adopted strict antiseptic means of treatment, not only during the earlier stages of the case, but to the last. So long as any part of the wound remains unhealed, antiseptic treatment of the strictest kind ought, I believe, to be employed. Even though the sore may seem to be superficial, there may still exist a sinus leading down to the site of the ligature; and if ordinary treatment, as distinguished from antiseptic, be employed, down this sinus the septic process may advance and invade the ligature, and lead at last to disaster from hæmorrhage. I know that this has actually taken place.

But although the catgut prepared after the old method answers very well if it be in proper condition, there is this great objection to that method: that it requires a long time in order to produce the requisite quality. At least two months are needed to make the ligature at all trustworthy. It is better at the end of six months, and still better at the end of a year. I possess catgut prepared in this way twelve years old. I have brought here a sample of such catgut, which has been steeping in warm blood-serum since this morning, and it will be seen that it remains translucent, and is comparatively firm, instead of being opaque and soft, like the unprepared catgut in the same serum.

Now, the length of time that the present method requires is a very serious objection. It places the surgeon who has not prepared the catgut for himself, and kept it for a long

time, at the mercy of the person who supplies it; and the person who supplies it, not being aware of the enormous importance of the question of time, if he happens to run out of that which has been long prepared, will sell what has been only a short time in the preparing liquid, and is, in consequence, altogether untrustworthy. A case illustrating this point occurred last year in my practice at King's College Hospital. A patient was admitted who had met with a severe wound on the ulnar side of the forearm, at the anterior aspect. The ulnar artery had been divided. This had been secured by my house-surgeon, who had also tied with catgut the corresponding ends of the various tendons that had been severed. But, when I saw the patient next day, I found that he could not feel with his little finger and the adjacent side of the ring finger, and, therefore, it was evident that his ulnar nerve also had been divided, and my house-surgeon had not thought of attending to the ulnar nerve. I therefore cut the stitches in the skin, and proceeded to explore the deeper parts of the wound, in order to find the ends of the divided nerve, and tie them also together with catgut; and I found that all the catgut sutures with which the ends of the several tendons had been tied together were lying absolutely loose; the knots had slipped within the twenty-four hours; and yet this catgut had been supplied by one of our ordinary instrument-makers. He had sent us what had not been sufficiently long prepared. I took care to use proper catgut for the ulnar nerve; and the patient left the hospital with restored sensation in the fingers. The length of time that it requires is, therefore, an exceedingly serious objection to the present method of preparation; and one great object which I have had in view, in a series of experiments on this subject, has been to devise a means, if possible, of preparation within a short time. These experiments—it may seem almost ludicrous to say so—have occupied two years of my leisure in the past, some time ago; and, after being interrupted by an accidental circumstance, have been continued in a more desultory manner since; but at length I feel myself justified in bringing before you a new mode of preparation, by which the catgut may in a short period be brought into a perfectly reliable condition.

But before I allude to these experiments, which I must endeavour to do in a short compass—I should weary you if I were to bring a large proportion of my facts before you, though I may say, out of the hundreds of experiments I have

performed on the subject, I have never performed one which has not added something to my knowledge of it—before referring to these experiments, I wish to say a few words as to what catgut is. Catgut, as you are all doubtless aware, is prepared from the small intestine of the sheep. The gut is treated in what seems an exceedingly rude manner for so delicate a structure. It is scraped with some blunt instrument, such as the back of a knife, over a board; and by this means, as the people express it, the dirt is scraped out. That which these persons call the dirt is the exquisite and complicated structure of the intestinal mucous membrane. But while the mucous membrane is scraped out from within, there is also scraped off from without, the circular coat of muscular fibres. The result comes to be that the intestine is converted into a comparatively unsubstantial material, consisting of two parts, or bands, one more slender than the other. When the intestine is stripped from the mesentery by the butcher, the peritoneal covering of the gut shrinks into a narrow strip, and this, with some longitudinal fibres, constitutes the more slender of the two parts to which the intestine is reduced by the process of scraping. The other part is the essential material from which the catgut is prepared, and this is neither more nor less than the sub-mucous cellular coat of the intestine. When I first visited a catgut manufactory I was astonished to find that, after this scraping process, the intestine could be blown up still as a continuous tube, as you see can be done with this specimen, which has been treated in the manner I have described. This translucent membranous tube is a beautiful anatomical preparation of the submucous cellular tissue, though made in so rude a fashion. This coat of the intestine, which in the sheep has such extraordinary toughness, is the material out of which the catgut is prepared. For what the manufacturer terms the 'ones'—the thicker form of ordinary catgut—all that is done is to twist the entire tube by means of a wheel, like a rope in a rope-walk, up to a considerable degree of tightness, and then allow it to dry. It is afterwards exposed to the fumes of burning sulphur, and for some more special purposes it is bleached by the action of potash. But the essential thing is the twisting and drying. It can be manufactured without sulphur, as well as without potash. Some specimens which I have here were made by means of water only, without the use of any other ingredient. This exceedingly beautiful material, as fine and

smooth as a horsehair, is nothing but the animal tissue twisted and dried. For the finer kinds the submucous coat is split up by means of razor blades, more or less numerous, according to the degree of splitting required, connected with a conical piece of wood which is pushed along the tube.

Such, then, is the material with which we have to deal. The first of the more recent experiments which I performed with reference to it was made with the view of ascertaining, if possible, what part the water played in the ingredients used for the preparation by our old method. If I steep unprepared catgut in a mixture of dry carbolic acid and oil, however long it be so steeped, although it will be of course abundantly aseptic, it remains utterly unfit for the purposes of the surgeon; a knot upon it would still slip in a wound. But if, instead of using carbolic acid in the crystalline state, we use carbolic acid which has been liquefied by the addition of a little water, we get in course of time a properly prepared catgut. I wished to ascertain how much water was required. The carbolic acid would enable oil to dissolve a certain amount of water; would that amount of water be sufficient which carbolic acid enables oil to dissolve? Accordingly, I prepared jars of carbolic oil, some containing the full amount of water we had used hitherto, some a smaller quantity, and some none at all, and placed in them portions of the same hank of catgut. In due time I proceeded to examine the result, by taking portions of gut and putting them into warm water and leaving them for a while, in order to ascertain how the knots would hold. To my great surprise, I found that which had been steeping in the carbolic acid and oil without any water just as good as that which was in the carbolic acid and oil with the water. This was contrary to distinct previous experience. Reflecting on the matter, I saw that the only possible explanation was that the catgut was already, so to speak, prepared before I put it in the liquid. Now it so happened that the catgut I had used was several years old; and it turned out that mere age of the catgut prepares it; that in proportion to its age it is rendered less liable to be softened by water or by blood-serum, and a knot tied upon it will hold better. And thus I had for the first time, I believe, scientific evidence of the truth of what is popularly spoken of as the 'seasoning' of various articles made of animal products. I asked a person who sold violin strings

if there was any result from keeping the strings a long time. He replied that the only result he knew of was that they would probably get rotten. But it so happened just about that time there came an old fiddler to amuse the patients in the Royal Infirmary, Edinburgh, at Christmas time. The weather was wet, and he said that his fiddle would not work properly because the fiddle-strings were not properly seasoned. So he was aware that fiddle-strings, which of course are catgut, are liable to seasoning, and require it. The knowledge of this effect of the mere lapse of time was very important, because it enabled me to explain the success that I had had in my earlier experience with catgut before I knew at all the proper mode of preparing it. I look back with horror at some of my early procedures with catgut. I have operated, for example, on an irreducible ventral hernia, opened the sac, divided the adhesions, returned the protruding intestines, stitched up the mouth of the sac with catgut, and then applied stitches at considerable intervals in the skin. All went perfectly well; but the mode of preparation that I then used, if I had worked with catgut recently made, must have led, in such a case, to utter disaster; the knots must have slipped in a few hours, and the intestines must have been protruded through the wound.

I need hardly say this mode of preparation, interesting though it is, would not be satisfactory; it would only have, in a more aggravated form, the inconvenience of the extremely long period which our old method demands. Besides that, it by no means fulfils all the conditions that are required for a perfectly satisfactory state of the catgut for surgical purposes. These conditions I will now mention. In the first place, I have spoken of a short period of preparation. This is very desirable. Then it is essential that the catgut should have proper strength, so as to bear any reasonable strain that the human hands can put upon it, in the thicker forms, as when used, for instance, in such cases as the circumferential ligature of the thyroid vessels in the removal of a goître, or for securing the pedicle in ovariotomy. And it is not sufficient that it should be strong to start with; it is easy to get catgut strong in the dry state; it is necessary that it should be strong after steeping in blood-serum for a while. Take, for example, the case of tumour of the thyroid. I employed six ligatures, and in a former case, where the tumour was larger, I thought it prudent to

pass as many as eight, so as to subdivide more the mass that had to be tied; but it is not convenient to tie each of these ligatures as soon as it is passed, and the process of passing takes a considerable time. Now it would be a very sad thing if the residence of the catgut among the tissues soaked with serum for a few minutes, or even a quarter of an hour, should render it so soft, that it should give way when we put the strain of the hands upon it. That, then, is another essential point, if the material is to be useful for all the purposes for which it is desired. Then, again, it is necessary that a knot tied upon it should hold with absolute security, not merely in the first instance, but after soaking for an unlimited time in blood-serum. It is further needful that it should not be too rigid; for, as we shall see immediately, it is possible for catgut to be over-prepared; in which case it may remain almost like a piece of wire among the tissues, and ultimately, perhaps, come away by suppuration in consequence of the mechanical irritation which it produces. But while the animal juices must be able to soften it sufficiently to render it mechanically unirritating, yet, on the other hand, it will not do for it to be too rapidly disposed of by absorption. If it is to do duty for the ligature of an artery in its continuity in the immediate vicinity of some large branch, it must remain for a considerable time of good strength, unabsorbed; and, when it is at length absorbed, it is desirable that it should be removed in such a manner that, while it is reduced in thickness, it shall still, as long as any of it remains, retain its tenacity.

Now, these are a series of conditions which, I assure you, it is not easy to fulfil completely. I have in various experiments complied with some of them easily enough, but failed in others. Sometimes I have succeeded with all but one, and one has baffled me. I have tried various materials, as you will naturally suppose. One substance that suggested itself was tannic acid, so as to convert the fibrous tissue of the catgut into leather. I succeeded well enough in some respects with tannic acid applied in different ways, but in one respect I did not succeed. I have not obtained by means of tannic acid a kind of catgut that is not too speedily absorbed. Even a piece of kid-leather, cut into a suitable shape for sutures, and rendered aseptic, became too rapidly absorbed. Chromic acid was another agent which I very naturally tried on account of its well-known effect in hardening tissues. Chromic acid alone does not work very well;

but I found that the addition of some other substances to it aided its action very greatly. By adding, for instance, to the watery solution a little glycerine, thus producing a reducing action on the chromic acid, we get a different sort of liquid, which acts much more energetically on the catgut. I was highly delighted with the results of the action of this mixture of chromic acid and glycerine; and just at this time (June 1876), it happened that Mr. Oliver Pemberton, of Birmingham, applied to me for a piece of catgut, for the purpose of ligaturing the external iliac artery in a remarkable case of three aneurisms in one limb—two in the femoral artery, and one in the popliteal. I thought I could not do better than send him a piece of my recently-prepared chromic catgut. I did so; and a month afterwards he wrote to me, saying that nothing could be more satisfactory than the result. He had operated antiseptically; the wound had united by first intention; and, so far as the case could go well, all had gone well. There was, indeed, gangrene of the lower part of the leg, which Mr. Pemberton had predicted would occur in consequence of the existence of four successive obstructions in the course of the arterial channel; viz. the ligature and three solid aneurisms. But the case, under proper management, was doing well. Four weeks later, however, Mr. Pemberton wrote to me again, telling me that, soon after his last report, the patient had begun to show signs of suppuration about the seat of the wound. After a while the abscess opened in the cicatrix, and one day the ligature which he had placed on the artery was found lying unaltered on the granulations.* It is now on one of the cards before you—an over-prepared ligature, which had come away, rigid and wire-like, making its way out, as a piece of glass might have done, by mechanical irritation. This opened my eyes for the first time to the possibility of having catgut over-prepared. This over-preparation by means of chromic acid is, I understand, to be found illustrated in a large German school at the present time. I have been told by an American physician, who has lately been in London after spending some time at that school, that the catgut ligatures come away from all wounds to which they are applied in that clinique. They count the ligatures as they put them on, and invariably see them all before the case is done with. The catgut has been over-prepared.

* For an account of this case by Mr. Pemberton, see 'The Lancet,' August 4th, 1877.

It is by means of chromic acid, however, that I have at length arrived at a result which appears to satisfy all our conditions. But, before speaking of the new method, I wish to say a few words more with regard to the old. To what is it that it owes its virtue? In this bottle is some catgut which has been nearly ten months in our old preparing liquid—namely, one part of carbolic acid which has been liquefied by means of water, to five parts of olive oil. In this other vessel again we have catgut which has been the same length of time in a solution of carbolic acid in water. Water will only take up about one-twentieth part of its weight of carbolic acid; but the effect produced upon the catgut by the watery solution is very much greater than that brought about by the four times stronger oily solution. In the former case, as you can see, the catgut is almost black, a sort of purple black; while the other is comparatively pale, very little altered from its original colour. This circumstance shows two things. In the first place the effect of the watery solution of carbolic acid upon the catgut explains the efficacy of the water in our old method. It is the watery solution of carbolic acid in the liquid of the old method that is the effective agent. But in the second place we see that, when the watery solution is mixed with oil, the fact that it is so mixed limits and checks its operation. If catgut is kept in the watery solution only, there seems to be no limit to the degree of continuous preparation of the gut—so that it becomes more and more dark in colour, and more and more difficult of absorption by the tissues. It is otherwise when the watery solution is blended with the oil. Though the process does go on for many months, there is a time when it comes to a standstill. You need not fear that catgut prepared by the old plan is ever over-prepared. There is a specimen on the table, which, at the end of twelve years is as limp, after steeping for a while in blood-serum, as it would have been at the end of a single year. Therefore, we possess in the carbolic oil a means of checking any mode of preparation that we may adopt, keeping it from that time forward not materially further prepared; while at the same time the large proportion of the carbolic acid to the oil (1 to 5) ensures the catgut being maintained perfectly aseptic.

The method of preparation which I have now the honour to bring before you is the following. I dissolve one part of chromic acid in 4000 parts of distilled water, and add to the solution 200 parts of pure carbolic acid, or absolute phenol.

In other words, I use a 1 to 20 watery solution of carbolic acid; only that the carbolic acid is dissolved, not in pure water, but in an exceedingly dilute solution of chromic acid. But minute as is the quantity of the chromic acid, it exerts, when in conjunction with carbolic acid, a most powerful influence upon the gut. The first effect of the addition of the carbolic acid to the chromic solution is to change its pale yellow colour to a rich golden tint. But if the liquid is allowed to stand without the introduction of the catgut, it changes in the course of a few hours to a dingy reddish brown in consequence of some mutual reaction of the two acids, and a certain amount of grey precipitate is formed. If, however, catgut about equal in weight to the carbolic acid is added as soon as the ingredients are mixed, the liquid retains its brightness, and the only change observed is a gradual diminution of the depth of the yellow colour; the precipitate, if it still occurs, taking place into the substance of the catgut. As soon, therefore, as the preparing liquid has been made, catgut equal in weight to the phenol is introduced into it. If you have too large a proportion of catgut, it will not be sufficiently prepared; if you have too small a quantity, it may run the risk of being over-prepared.* At the end of forty-eight hours the chromic element of the liquid has nearly spent itself, and the process of preparation is complete. The catgut is then taken out of the solution and dried, and, when dry, placed in 1 to 5 carbolic oil; it is then fit for use. I have here a sample of catgut prepared by this method. Although it has been steeped in warm blood-serum since this morning at eleven o'clock, it is still translucent and firm without being rigid, and a reef-knot tied upon it holds with the most perfect security.

The strength of the catgut depends upon different circumstances. In the first place, sheep differ as to the strength of their intestines; and the catgut-maker, if he understands his business, will insist upon having his raw material of a proper kind. In the next place, the intestines must not be allowed to putrefy—they must be used when quite fresh. For these things you must, of course, rely upon the maker of the catgut. In the next place, the preparing liquid causes a certain amount of softening of the catgut, and if it is introduced in loose hanks, this will tend to produce a little uncoiling of the twisted cord, and a still greater degree of

* A moderate excess of the liquid, not exceeding twice the prescribed amount, does not produce any serious degree of over-preparation.

uncoiling will take place during drying. It is of very great importance that this should not occur, because it involves weakening of the thread, and that in different degrees in different parts; and this may lead to the gut giving way when you subject it to a strain. The catgut, then, should be prepared on the stretch both when it is put to soak and when it is put to dry.

I need not enter into the mode in which this can be done by the manufacturer. I may only say this, that the surgeon who wishes to prepare it himself may do it in different ways. For instance, he may take two large test-tubes, one a little larger than the other, and he may wind the catgut on the smaller tube, fixing one end by sealing-wax, winding it round, then bringing it up again, and fixing the other end also with sealing-wax at a higher level than the liquid will reach, putting sufficient liquid into the larger test-tube, and introducing the smaller test-tube with the catgut wound round it, and containing a little shot or other heavy material to keep it down in the liquid. After forty-eight hours he takes out the smaller test-tube, and leaves it till the catgut is completely dry. I merely mention this as an illustration, and also as furnishing a hint to some surgeons in private practice who may desire to prepare the catgut themselves. Or a couple of gallipots, one larger than the other, will do just as well. But, as I have already said, the principal uncoiling takes place during drying; and for all ordinary purposes a sufficiently good article is got by putting the catgut loose into the liquid, and making it dry on the stretch, by tying the ends of each hank to two fixed points in a room.

In the dry state, catgut prepared by this method is as strong as need be. As to strength in the condition after steeping in blood-serum, I confess it is only this very day that I have obtained evidence that catgut thus prepared is really all that we can desire in that respect. The catgut of the hank from which this specimen was taken measured in the dry state 2⅔ hundredths of an inch in diameter, and broke at 13 lbs. 6 oz. I have found by experiment that 10 lbs. is the utmost strain that my arms are able to put upon a cord. Thirteen pounds six ounces, then, is amply sufficient; while, at the same time, the catgut is not at all too large for going into the eye of an aneurism-needle. Having obtained, the other day, some fresh blood of a cow from the slaughter-house, I took some of the serum to-day, and put two pieces of this same hank of catgut in

the serum, and placed it in a stoppered bottle in a warm box at a temperature of 98° Fahr. After more than half an hour I tested the breaking strain (I must not stop to explain how that is done*), and I found that the breaking strain of the same catgut which in the dry state had broken at 13 lbs. 6 oz., was 11 lbs. 4 oz.; that is, though suppled by the serum, it had only lost in strength two pounds out of thirteen. I think that is really all that can be desired.

[A few days after the delivery of this address I made some experiments regarding the strength of the new gut after longer periods of immersion, using the serum which I had before employed for the purpose, and which, being derived from blood taken from a cow with antiseptic precautions, remained still perfectly sweet. I first tried the specimen of gut twelve years old, prepared by the old method, a portion of which I exhibited at the meeting steeped in serum. It is comparatively slender gut, having little more than half the thickness of the chromic gut with which I before experimented, the average diameter being $1\frac{2}{3}$ hundredth of an inch. Two trials of it in the dry state gave 5 lbs. 9 oz. as the average breaking strain; and two other pieces, after steeping half an hour in the warm serum, broke at 3 lbs. 14 oz. In other words, this especially well-seasoned sample of what the old method could provide was deprived by warm serum of about one-third of its strength in half an hour. I next tested a piece of gut prepared three months ago by the new method, similar in thickness to the other, viz. having an average diameter of $1\frac{2}{3}$ hundredth of an inch. Four trials with it in the dry state gave an average breaking strain of 6 lbs. 15 oz. I then placed in the warm serum three other pieces of the same hank, after measuring their diameters. One of these pieces, with diameter $1\frac{2}{3}$ hun-

* The mode of proceeding was as follows. A piece of steel, of horse-shoe form, is suspended by a ring on the middle of its convexity, so that the horns of the horse-shoe are dependent; these horns being perforated for the reception of a cylindrical bolt of steel, which thus lies horizontally, and can be removed at pleasure. A piece of the catgut having been tied in a double reef-knot, the bolt is partially withdrawn, and is readjusted after the noose of the catgut has been slipped over it. Into the lower part of the catgut-ring thus suspended is passed the upper end of a pot-hook, to the lower part of which are attached weights approaching what the gut is likely to bear, and also an empty bag, into which shot is poured till the cord gives way. The shot is weighed; and the result, added to the other weights, gives double the breaking strain of the gut; for, as the cylindrical bolt works with perfect smoothness in its bed, it adjusts itself so as to prevent inequality of strain in the two sides of the catgut-ring, which thus take an exactly equal share in sustaining the weight.

dredth of an inch, tested after it had been one hour in the serum, broke at a strain of 5 lbs. 13 oz. Another piece, which when dry measured decidedly less in diameter than the first, was tried after being fourteen hours and a half in the serum, when it also broke at 5 lbs. 13 oz. A third piece, just $\frac{3}{4}$ hundredth of an inch in diameter when dry, was left in the warm serum for twenty-four hours, at the end of which time it showed a breaking strain of 5 lbs. $10\frac{1}{2}$ oz. Thus the new gut continued as strong, or nearly so, at the end of a day in the serum as it had been after the lapse of an hour, and lost in the serum only about one-seventh of its total strength in the dry state, a result corresponding very closely with that obtained in the former experiment with the thicker chromic gut after forty minutes' immersion. At the same time, the new gut being considerably stronger to start with than that prepared by the old method, its strength, after steeping for twenty-four hours in warm serum, was greater than that of the old kind in the dry state.]

The only remaining condition to be considered regarding the new catgut, is its suitable behaviour among the tissues. Before describing this, I must say a few words regarding the manner in which catgut is absorbed. It has been said of late by various persons that the catgut is dissolved by the serum. I must confess that this is entirely contrary to my own experience. I have already said that, in order to test the quality of catgut, you must have it steeped in blood-serum. I have tested in this manner catgut prepared in various ways. The serum has sometimes been putrid, sometimes it had no smell at all, and sometimes it had a little odour. The serum has been kept about the temperature of the body, but I have never seen the slightest indication of any chemical solution of the catgut. Then, again, as to the behaviour of the catgut in the body: suppose we use it as a stitch, if the catgut were disposed of as a matter of chemical solution we should expect that, when it is employed as a stitch and a piece of oil protective is put over it, which is always kept moist with serum perpetually oozing from the wound, the outer parts of the stitch, the parts outside the tissues as well as the parts among the tissues, would show increased diminution. It is never so. The diminution is always absolutely limited to the parts within the tissues. It is still more striking, as was suggested to me by Mr. [illegible] to consider the case of catgut used as a drain. The [illegible] function is to drain out the serum, and it is

perpetually washed with it. You might suppose that a stitch might perhaps become a little dry; but here there can be no mistake; the serum from the wound is perpetually flowing over the gut, yet, as in the case of the suture, we find the diminution of the catgut is absolutely limited to the part within the tissues. This seems to me sufficient evidence that it is not a question of mere chemical solution of the catgut, but of disposal of the catgut in some way or other by the living textures.

Now, if we examine catgut in the process of diminution in the living body, we find that it may be affected in one of

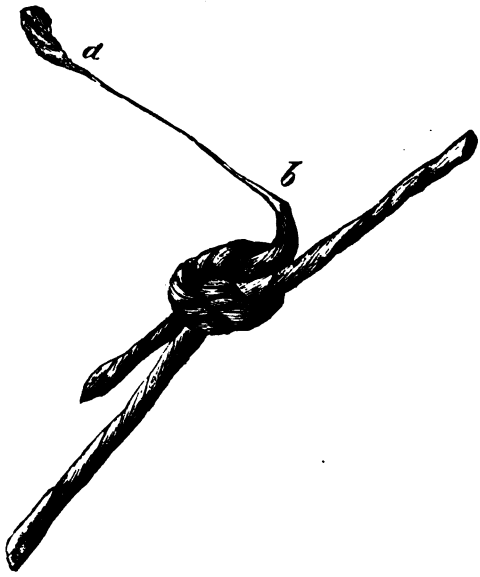


FIG. 1.—In this woodcut, the suture referred to is represented magnified five diameters. Its actual thickness was one-fiftieth of an inch. The part between *a* and *b* is that which had been among the tissues.

two ways. If it has not been properly prepared, the substance of the catgut becomes converted, in the course of a very few days, into a soft pultaceous mass, which, when we examine it by a microscope, we see consists of remains of the old cellular tissue of the submucous coat, with the interstices among the fibres filled with cells of new formation. The catgut tissue is infiltrated with young growing cells, and it is obvious it is this infiltration which is the cause of the softening. But, on the other hand, if the cat-

gut is properly prepared, instead of being infiltrated by the cells of new formation, it is only superficially eroded. In this stitch (Fig. 1) of catgut prepared by the new method, removed from a wound thirteen days after its introduction, you have a good example of this important fact. You will see that, at the part which was among the tissues, there remains a very slender residue of the catgut, all the rest having gone; but that slender residue was pretty tough, and remained translucent, showing not even a superficial infiltration; in short, having exactly the characters that we desire for catgut for the ligature of an artery in its continuity, namely, that it shall not disappear too rapidly, and that till the last, even though reduced in dimensions, it shall retain some degree of its original firmness and tenacity. We know that antiseptic treatment has shown that a piece of dead bone may be absorbed, provided it be not putrid: the granulations that overlap it superficially may, so to speak, erode it. It is not necessary for us now to consider how that is effected; but certainly, in some way or other, the granulations do what mere steeping in serum, whether putrid or non-putrid, never would do. Never, I believe, would the bone be dissolved by the serum; and just as a non-putrid sequestrum is served by the tissues, so is a well-prepared specimen of catgut; it is superficially eroded. I have here a stitch that I removed to-day from a wound made ten days ago—a wound made for stretching the anterior crural nerve, which, as well as the sciatic, was subjected to that treatment, in an aggravated case of sciatica. You may see that, as yet, it shows no signs of erosion. We know by experience that, if it were left three or four more days, we should probably find it eroded, as the former specimen indicates; but until nearly a fortnight has elapsed erosion does not begin. It then proceeds gradually, and, therefore, the thicker the catgut, the longer is the time required for its complete removal. We may fairly consider that from a fortnight to three weeks is long enough for the persistence of a ligature upon an artery in its continuity. [Three days later I removed two remaining stitches in the case last referred to, and found both of them slightly eroded superficially.]

I have brought with me this evening a preparation of the carotid artery of the calf in which I first established the fact of the substitution of new living tissue for the dead old tissue of the catgut.* If any gentleman will examine

* See 'The Lancet,' loc. cit.

the specimen after the meeting, he will see the ligatures of new formation incorporated with the external cellular coat of the artery. I have been strangely misunderstood as having intended to convey the idea that the catgut, when it becomes organised, comes to life again. Gentlemen, such an absurd notion certainly never entered into my head; any more than, when I have spoken of the organisation of a blood-clot, I have meant by that expression to convey the idea that the blood-clot becomes organised by its own inherent virtue. I found the term 'organisation' ready to my hand; it was not a word of my invention. It had been used with reference to lymph. Now, pathologists, in speaking of lymph as becoming organised, did not, I suspect, mean by that expression to imply that it was the lymph-substance that had the power of self-organisation, as distinguished from any influence that surrounding tissues might exert upon it. So in the same way the expression 'vascularisation of lymph' was used when it was universally believed by pathologists that the new blood-vessels were formed only as loops from pre-existing blood-vessels. Nowadays a different view may be taken, but the term 'vascularisation of lymph' was employed without any notion that the lymph itself created the blood-vessels. And so when I spoke of the organisation of the blood-clot or of catgut I never meant to convey the idea that the one or the other did the work itself. As to the blood-clot, we know that if it remains free from putrefaction among the tissues, it speedily becomes infiltrated with cells of new formation. Whether the white corpuscles originally present in the clot take any part in the formation of these new cells is a question now under discussion, and one, I conceive, not at all prejudiced by the use of the term 'organisation of the blood-clot.' With regard to catgut, I think, if gentlemen would refer to my original paper in the 'Lancet,' they would see that I stated very explicitly that new tissue forms at the expense of the old, that the old tissue is absorbed by the new, and that as the old is absorbed, new is put down in its place.

In conclusion, gentlemen, I venture to recommend the new chromic catgut as in all respects deserving of your confidence, and at the same time to thank you sincerely for the patient attention with which you have listened to this address.

COMMUNICATIONS.

I.—*A Family affected with Locomotor Ataxy.* By W. R. Gowers, M.D. *Read October* 8, 1880.

THE cases to which I am about to ask your attention are a series of members of the same family (named Shaw), affected with locomotor ataxy. Several of them are here for your inspection. I will, in the first place, briefly describe the cases.

The father of the family died, two years ago, of Bright's disease. He is not known to have suffered from any affection of the nervous system. He had two brothers. One of these also died of Bright's disease, and was a strong healthy man until the commencement of the renal affection. The second brother is insane. Two half-cousins are said also to have been insane. The father's mother was paralysed in her tongue before her death. The mother of the patients died, late in life, from an abdominal tumour. As long as her children can remember, she was a strong healthy woman, but she is said to have suffered, in early life, from two attacks of chorea.

The family consisted of nine children. The eldest is a son now æt. 39. He began to suffer from unsteadiness in walking at the age of 21. This has gradually increased, especially since, two years ago, he fell and broke his leg. He is still able to walk on crutches. There is distinct slight weakness in both legs; when he walks slowly, there is no markedly ataxic gait, but if he takes longer steps, his legs are raised too high, and are thrown forwards too much. There is marked incoordination of movement of the hands. Sensation to touch is everywhere normal; that to pain is distinctly increased upon the legs; a slight prick makes him draw up his legs and call out. The superficial reflexes are

active, with the exception of the cremaster reflex, which cannot be obtained. The knee-jerk ('patella-tendon reflex') is absolutely lost; no ankle clonus, or front-tap contraction, can be elicited. Speech is distinctly affected; there is undue running together of syllables, and now and then they are unduly separated.

The second child was a girl, who died at the age of 10 of some fever.

The third is a son, now æt. 35, and perfectly healthy. He presents no difficulty in standing or walking, no affection of sensation, and his knee-jerk is quite normal. He is married, and has several young children, all healthy.

The fourth is also a son, now æt. 33, and perfectly healthy. A careful examination revealed no sign of disease. He is married, and his children are healthy.

The fifth child is a girl, now æt. 29. She was quite well until the age of 18, when her legs began to fail, and the difficulty in walking gradually increased. She can now scarcely stand, even with help. Her legs are weak, but there seems more difficulty in standing than the weakness will account for. Sensation in the legs is normal. The knee-jerk is lost. There is marked, but not extreme, incoordination in the arms. There is no unsteadiness in the head. Speech is markedly syllabic. The sphincters are unaffected, and she menstruates regularly.

The sixth child, a son, æt. 26, is also perfectly well. He is married and has healthy children.

The seventh is a son, æt. 23, considerably affected. His symptoms commenced at the age of 19, and he is now only just able to stagger across a room without assistance. His articulation is distinctly confluent. As he sits, there is a little unsteadiness of the head, but this appears to depend rather on the muscles of the shoulder and back than on those of the head. There is incoordination in the arms, which sway about on any coarse movement being attempted. He is just able to write a word or two with difficulty. The interference with movement is equal in the two arms. The power of grasp is fair. There is no detectable loss of sensation in the arms. Power in the legs is also good, and sensation to pain and touch is unimpaired. In walking, he takes short steps and sways about; he is unable to stand, except with his feet far apart. There is no distinct throwing about of the legs, but quick rather uncertain movement with unsteadiness. The knee-jerk is completely lost, and there

is no trace of ankle clonus. Of the superficial reflexes, the plantar is active on each side, the cremaster reflex is active on the right side but sluggish on the left. The abdominal reflex is also rather better on the right side than on the left.

The eighth child is also a son, now æt. 22. He was said to be 'all right,' but on examination was found to present very distinct evidence of the same affection. There is very little alteration in his speech, a slight tendency to a confluent articulation alone being noticeable. He has been conscious of slight occasional unsteadiness in walking for two or three years, but ascribed it to nervousness. His gait now, though not graceful, is scarcely abnormal. He can stand, with a little difficulty, with his toes and heels together, but if he then shuts his eyes he has the greatest difficulty in maintaining his equilibrium. There is no knee-jerk. Sensation is distinctly impaired to touch on both legs, a gentle touch being unfelt. To pain and heat it appears normal. The superficial reflexes are lessened. There is scarcely any plantar reflex, the cremaster reflex is entirely absent, and the abdominal reflexes are slight, with the exception of the epigastric, which is normal. There is no impairment of the movement of the arms, and no affection of the sphincters.

The youngest son, æt. 19, is also distinctly affected. There is occasional slight unsteadiness of head. Articulation is sometimes syllabic, and sometimes somewhat confluent. His hands are strong: they present no incoordination, but his handwriting is evidently unsteady. The power in his legs seems unimpaired. On standing he places his feet wide apart, and in walking, especially after turning round, there is slight unsteadiness. He can stand with his feet together and eyes open, but if he closes his eyes he reels and would fall. He often, when sitting, cannot tell where his legs are. Sensation of pain and temperature is normal in the legs, that of touch is distinctly impaired, a gentle touch being everywhere unfelt over the legs and feet: on the abdomen it is normal. The knee-jerk is absent in both legs, there is no trace of ankle clonus, or front-tap contraction: the gluteal reflex is to be obtained on each side, but is sluggish. The cremaster reflex is present, although slight, on the right side, but is absent on the left. The abdominal and epigastric reflexes are however very active.

Thus of eight members of the family, one female and seven males, who have reached adult life, five are affected, the

daughter and four of the sons. Those who have escaped are the second, third, and fifth of the survivors. Of the three elder children, only one, the eldest, is affected, but of the three youngest all are affected. The symptoms in each case are nearly the same, consisting of incoordination in all, anæsthesia in two, loss of the knee reflex in all, and altered articulation in all. It is remarkable that the impairment of sensation exists only in the two younger and least affected members. In none has there been any kind of pain in the limbs. In none is there any affection of intelligence or any affection of sight, or impairment of the movements of the iris. The state of sexual power is unknown, the patients being all unmarried. The symptoms commenced in each at about the same age, 19 or 20 years, but it has evidently made much more rapid progress in some than in others. The degree of affection is at the present time as follows: the most severely affected are the daughter æt. 29, and the eldest son æt. 39, next the son æt. 23, next the son æt. 19, and least the son æt. 22.

Regarding the causes of the disease, nothing beyond the hereditary influence can be learned. None of the patients have apparently suffered from syphilis. There is no indication of inherited syphilis. On the father's side there is a strong history of insanity. The mother had suffered from chorea, and if we admit, as I believe we must, the occurrence of chorea to be evidence of a neuropathic disposition, there is thus a double neurotic heredity.

It is well known that attention was first called by Friedreich to the occurrence of a peculiar form of ataxy in several members of the same family. He described two series of such cases. A few instances of the affection of several brothers or sisters had been recorded before by Carré and Duchenne, and one or two instances have been since observed abroad. Two other groups of cases have been described in this country. The first was that of two patients, girls, shown to the Medical Society of London in 1872 by Dr. Carpenter of Croydon, under the name of 'Cases of Muscular Anæsthesia.' I have learned that a third member of this family has become affected. The other group is that of three brothers and two sisters whose cases were described by Dr. Dreschfeld in the 'Manchester and Liverpool Reports,' for 1876.

Friedreich noted certain peculiarities in his cases, the early onset of the symptoms, the preponderant affection of

women, the early affection of the arms, the constant disturbance of speech, the frequency of nystagmus, and absence of any affection of sensation. The cases described by others have not, however, corresponded in all respects with those of Friedreich. Those which I have brought forward to-night agree with his in the early age at which the symptoms commenced, the involvement of the arms, and the affection of speech. They differ in the proportional affection of males, in the absence of nystagmus, and in the very distinct affection of sensation in two cases. As a rule, in recorded instances, the affection has been confined to one generation. In one instance only, that of Carré, several generations were affected. In Friedreich's cases there was an indistinct history of antecedent neurosis, weight being chiefly attached to parental intemperance. In my cases the neurotic antecedents were distinct, but there was no history of the same affection. It is therefore scarcely accurate to designate this form, as is commonly done, '*hereditary* ataxy.'

Friedreich described the disturbance of speech as 'ataxy of articulation.' It does not, however, differ from that noticeable in many degenerative affections of the nervous system.

I may remind you that in two of Friedreich's cases, a microscopical examination of the spinal cord showed disease of the posterior columns similar to that found in ordinary ataxy. The degeneration however also affected the periphery of the antero-lateral columns, especially that which Flechsig identifies as the direct cerebellar tract. The pyramidal tracts were unaffected.

II.—*A Case of Eyeball-tension treated by Sclerotomy.* By W. Spencer Watson, M.B. *Read October* 8, 1880.

ELIZABETH M. BROOKS, a widow æt. 46, a dressmaker employed in making mourning dresses, rather young-looking for her age and with no marked cachexia, came to the hospital on April 5, 1876, with acute eyeball-tension of the right eye. Her left eye had been subject to occasional chromopsiæ for about four years, and the right for two years. The sight of the right eye had however been good till April 3 (two days before admission), when she was seized with sudden and severe pain in the brow and eyeball, with rapid loss of vision.

On admission there was T_2, pupil fixed but not dilated. No details visible by the use of the ophthalmoscope. V fingers. Sclerotomy upwards was at once performed, rather a small section being made. The morphia and glycerine ointment was rubbed into the frontal and temporal regions, and a bromide and iodide (gr. v. of each) mixture given twice a day.

April 6.—T. normal. No pain. She slept well last night, for the first time for several nights past. The pupil is drawn upwards, and the iris prolapsed slightly. V is not improved.

Steady improvement continued after this and on April 12 V was J 20 at 12″ while distant V had also improved.

On May 20, V J 17 at 12″. O S media clear. Optic disk white but not excavated. Tn. Uses + 10 for reading.

In January 1880, there was still the same condition of the right eye as regards vision and tension, though the optic disc was seen to be excavated and pale. The staphylomatous protrusion of the iris continues, but causes not the slightest inconvenience. The left eye is somewhat overtense and there are still occasional chromopsiæ.

With spectacles (+7) she reads J 4. The right eye is a little less perfect for reading than the left. (R*e* + 7 J 6. L*e* + 7 J 4.) That is to say, with spectacles having biconvex glasses of 7 inch focal length she can read *Mignon* types: but with the right eye alone (assisted by a biconvex glass of 7 inch focal length) she can only read *Bourgeois.* 'their ravages.' But for distance there is no difference in the acuteness of vision.

$$\text{R S} = \frac{12}{\text{LXX}} \quad \text{LS} = \frac{12}{\text{LXX}}$$

i.e., at a distance of 12 feet she can distinguish letters of Snellen's test types No. LXX. These letters are $1\frac{1}{4}$ inches in vertical length. With normal vision letters of $\frac{1}{5}$ inch can be distinguished at this distance. The acuteness of vision in this case is therefore about $\frac{1}{6}$ of the normal standard.

March, 1880.—She has been using eserine drops occasionally for the left whenever the symptoms have become urgent. There is still slight increase of tension in this eye; that of the right remaining normal.

I advise Sclerotomy for the left eye, but the impairment of V is at present so slight and the use of the eserine gives such manifest relief of the symptoms whenever they become troublesome, that the patient has hitherto been content

'to bear the ills she has,' etc., though from the result of the operation in her right eye (four years ago) she may be pretty sure that she could not be flying 'to others that she knows not of.' At the time of that operation I was not so fully aware of the beneficial effects of eserine as I have now become, and consequently did not employ it for that eye.

October 8, 1880.—The right eye has slightly improved since the last notes. $S = \frac{12}{XL}$ and with +9 she reads J 4.

The left eye is still subject to chromopsiæ, which are kept in check by the use of eserine. The tension, however, is still in excess, and the vision remains as before. The optic disc is slightly excavated with large tortuous vessels running across it, but no pulsation was seen in these vessels.

The patient continues to work as a needlewoman.

III.—*A Case of Elephantiasis of the Leg, treated by Elastic Bandaging.* By Stephen Mackenzie, M.D. *Read October* 8, 1880.

J. C., æt. 33. Family history unimportant. The patient is a native of Rasscor, in the county of Fermanagh, in the North of Ireland, where he has resided all his life. The only occasion on which he has left Ireland is the present, for the purpose of treatment. He has always led a healthy hard-working life as a farm labourer. He states he has been temperate in his habits, and denies syphilis and gonorrhœa. His home is about nine miles from the coast, which he has only visited once, and that for his health subsequent to his present disease. His chief diet, when well, was potatoes, with bacon, oatmeal, and occasionally Indian corn. He lives on the bank of a stream, and previous to his illness he often angled for a meal. About eight years ago (two years subsequent to the onset of his disease) there was a great take of fish in the river, of which he ate largely. They were all clean river fish, and were not kept until they were stale. The present is the only disease he has had since measles in childhood.

He dates the beginning of his present illness from an accident ten years ago, when the wheel of a light cart passed over his leg, just above the foot. No bones were broken, but the leg was very much bruised and swollen. He re-

sumed his work after a few days' rest. About three months after the accident he noticed that the left leg below the knee was larger than the corresponding part of the other leg, and from that time until his coming under treatment, the limb has continued to enlarge. A year and a half after the accident, he went to a doctor on account of the swelling of the leg, and was told to get a bandage, and apply it to the leg. This the patient did himself, beginning to bandage at the toes, and continuing it as high as the knee. The bandage was applied very tightly for two months, during which time the thigh became swollen. Ever since then both leg and thigh have continued to increase in size. It is six years since he has been able to walk well, but he can even now get about without assistance, and has continued his outdoor work which has been made very light. About four times each year since his leg has been bad—with a certain degree of regularity—the leg becomes acutely worse. For a few days previously he feels sick, and sometimes actually vomits, his head aches, and he shivers all over to his fingers' ends, and his teeth crack together. After these premonitory symptoms, the leg becomes sore at one particular spot, and in the course of the day the soreness goes through the whole limb. He describes the feeling as a heavy burning soreness. Following this pain the leg will become 'as red as a bar of iron,' and greatly swollen. He has measured its circumference on several occasions, and it has been about three inches greater than previous to the exacerbations; it feels extremely hot and smokes, so that steam can be seen to rise from it. After remaining in this state for about one week, during which time he can scarcely put it to the ground, the surface of the leg begins to run. The skin seems to get loose and to come off, and then the running takes place. The fluid is at first quite clear, like water, but has an offensive smell. When the leg begins to run he gets ease, the heat leaves the leg, and he feels better; the nausea leaves him, and a sharpness for food comes on. The leg runs as a rule for four or five days, and during this time it diminishes in size, but is left larger by about three inches, he thinks, after the subsidence of each attack. During the attacks he is pulled down very much, loses flesh, and is scarcely able to walk; his urine is thick and dark at these times. The burning pain leaves the limb when the running takes place, and he is only inconvenienced by its bulk and weight in the efforts required to drag it about.

Except during these attacks he has no pain in the leg, and its colour is usually natural, or slightly redder than normal. For the last three years he has been losing flesh very much, and strength slightly, but on the whole his general health has been good.

He was admitted into the London Hospital, under my care, on September 24, 1879. The following notes were then taken. The patient is a dark-haired man, with grey eyes and a tanned complexion. The viscera are all healthy: the skin warm and moist; the muscles somewhat flabby. The left lower extremity is enormously increased in size. The enlargement commences somewhat gradually at about the level of Poupart's ligament. It then bulges out in an irregular way some inches lower down the thigh, and from here to the ankle it is enormously enlarged and presents several large lobulated outgrowths with deep intervening fissures. The outline of the limb is very irregular owing to these lobulated masses. The greatest enlargements are above and below the knee, there being a constriction on the outer aspect of the knee. The general effect is an irregular spindle, the limb tapering at each end. The lobulations are situated laterally and posteriorly, none occurring in the anterior aspect of the limb. The surface has a dull erythematous, but not livid appearance, which is most marked below the knee. The skin is everywhere thickened, and the thickening increases from above down to the ankle. Over the whole of the leg, especially at its lower part, it presents numerous warty or papillary elevations, giving the skin a mammillated appearance. In some places there are abrasions of the cuticle varying in size from a threepenny to a five-shilling piece. These are mainly on the leg itself, and one on the dorsum of the foot; they exude a thin watery viscid fluid which coagulates into a dirty white crust. There is œdema from the middle of the thigh down to the toes, increasing as it descends. The outline of the patella can be felt, and the skin is adherent to the bone in this situation. The foot is swollen, the skin is smooth, but abraded at one point. There is a large transverse lobulation at the bend of the ankle. He still retains some power of flexion and extension at the knee joint, the foot can be flexed and extended, and permits also of some lateral motion. The nates and scrotum are unaffected. No enlarged glands can be felt in the groin. No enlarged veins are visible on the limb.

The actual measurements are as follows:

From anterior superior spine of ilium to second toe of left foot, flexed to utmost	35 inches
Corresponding measurement of opposite limb . . .	32 ,,

Circumferential measurements:

9 ins.	below	ant.	super. iliac spine, left	29½	ins. right	17½
14	,,	,,	,,	33	,,	14
20	,,	,,	,,	21	,,	11½
28	,,	,,	,,	29	,,	9
Round dorsum of foot at centre . .				11½	,,	9

Sensation of left leg slightly impaired, he being unable to distinguish the two points of a compass when considerably separated.

The right leg is normal in all respects; his blood presents no peculiarities. Urine natural in quantity and character. Temperature normal.

At first the patient was simply confined to his bed, and ordered a cinchonine mixture. The rest in bed caused a considerable subsidence of the swelling, the measurements at 9 inches below anterior superior iliac spine (A) sinking on October 7 to 26½ inches, 14 inches below anterior superior iliac spine (B) 27½ inches; 28 inches below anterior superior iliac spine (C) 24 inches.

The enlargement increased again whilst he remained under the same conditions, and on his being allowed to get up the limb regained almost, though not quite its former dimensions. Having watched the case about one month active treatment was now adopted. This consisted of the regular daily application of elastic rubber bandages to the limb, commencing at the toes and passing right up the leg and thigh. The patient was kept in bed, at first being allowed one hour up, to go into the garden and smoke. Later the time allowed up was greater.

The diminution of the limb since the bandaging has been adopted has been almost uninterrupted and very remarkable. Measurements at the same points have been taken every few days throughout the treatment. It is only necessary to quote a few of these to show the striking reduction of the limb, the measurements being very nearly one-half at the present time what they were on admission and previous to the bandaging.

The bandaging was commenced on October 29, at which date the measurements were at

	A 29 ins.	B 31 ins.	C 25¾ ins.
November 29 . . .	A 25⅝ „	B 24⅝ „	C 14½ „
December 30 . . .	A 24¼ „	B 22 „	C 16½ „
January 30 . . .	A 22 „	B 19 „	C 14½ „
February 23 . . .	A 22 „	B 16 „	C 14½ „
March 16 . . .	A 21 „	B 16½ „	C 11½ „

The patient has experienced very little inconvenience at any time from the treatment employed. Where the pressure tended to cause irritation cotton wool has been interposed. A good deal of fluid exuded from the cuticular abrasions, and the decrease in the size of the limb appeared to be strictly proportionate to the amount of fluid exuded. The fluid was slightly milky, and had a tendency to become fetid when confined. As the thigh decreased in size nodules and canals could be felt and seen in the tissues, which gave the impression of dilated tubes—lymphatics or veins. When the swelling of the limb was sufficiently reduced for the bones to be examined, it appeared that those of the leg were thickened.

The patient has had one of his paroxysmal attacks whilst in the hospital. He knew for some days that it was coming on. It was ushered in with slight shivering. Following this the leg became hot and slightly swollen. His temperature in the axilla rose to 103°, and the surface temperature of the limb was raised above that of its fellow. After a few days, all the symptoms subsided coincidently with increased exudation from the leg. The attack was much milder, he said, than any former one.

Whilst this case probably differs from the tropical disease in its remote cause, and in the absence of filariæ in the blood, and chyluria (conditions frequently found in tropical cases, and the former being supposed to stand in genetic relationship to the disease in many cases), the disease attained almost as high a grade as the elephant leg of Barbadoes or India.

I have brought it forward to show the good effects of elastic bandaging. There is no novelty in using bandaging to a limb in this condition; for it is generally employed, alone or combined with other treatment, in cases of this disease. I do not, however, know of any published case in which Martin's indiarubber bandages have been used for the purpose. They allow of considerable and even pressure being exercised; their elasticity causes the pressure to be

continued as the swelling recedes; they are very readily applied, and can be washed every day.

The results in this case could, I think, have scarcely been better by any different treatment, whilst that employed was wholly destitute of the dangers involved in ligation of the femoral artery.

Postscript.—On discontinuing the bandages the limb increased considerably in size, but it subsided again on reapplying them. The patient was discharged wearing the bandages, and was advised to wear them continuously.

IV.—*Case of Traumatic Epilepsy treated by Trephining.* By David B. Lees, M.D., and E. Bellamy. *Read October* 8, 1880.

THE use of the trephine for the cure of epilepsy resulting from injuries to the head cannot be said to be as yet generally accepted as a regular surgical procedure. We have therefore thought it right to publish the following case, although the relief obtained has not been complete, and although the operation was followed by circumstances much to be regretted. Whether these circumstances were results of the operation, or a simple coincidence, is one of the points on which the opinion of the society is invited.

Stephen C—— enjoyed good health and had never suffered from fits before he was seven years old. It should perhaps be mentioned as a point of interest, though not strictly belonging to the case, that his mother is now affected with chronic mania and is an inmate of St. Luke's Asylum. In the month of June, 1872, while playing with another boy in his mother's house, he received a blow on the head from a poker. He ran to his mother complaining of pain. She found a swelling on the scalp. The spot which she invariably pointed out as the site of the injury was on the right parietal region, about half-way between the level of the auditory meatus and the vertex, and about two inches behind a vertical line through the meatus. There was no breach of surface, and no bleeding. He did not lose consciousness. The next day he complained of headache, and this symptom continued more or less until after the operation. About twelve months after the accident he began to have fits, at first about once a

day, but afterwards more frequently. He attended as an out-patient at the Hospital for Sick Children, Great Ormond Street, for several years. In August, 1877, he was an in-patient for seven weeks, under the care of Dr. Gee. It was then noted that the fits were symmetrical in character, affecting equally the two sides.

On his being again made an out-patient, he came under Dr. Lees' observation. No trace of the injury could be then detected on the head: there was neither scar nor depression of bone.

The following notes will give some idea of his condition:—

Oct. 1, 1877.—Ten fits during the last week. Taking pot. brom. gr. xx. every night.

Nov. 8.—Many more fits. Pot. brom. gr. xv. ter die.

Dec. 3.—Eleven fits in a fortnight. Mist. ol. morrhuæ.

Dec. 13.—Eight fits this week.

Feb. 4, 1878.—Three fits.

Feb. 18.—Nine fits. Pot. brom. gr. xv. ter die.

Feb. 28.—Thirty-one fits. Pot. brom. gr. xxv. ter die.

March 4.—Nineteen fits. Pot. brom. gr. xxx., tinct. belladonnæ ♏ xv. ter die.

March 8.—Thirteen fits. Rep. mist. quater die.

March 14.—Eighteen fits. Pot. brom. gr. xxx., tr. bellad. ♏ x every three hours.

March 18.—Eleven fits, not so bad. Repeat medicine every two hours.

March 21.—Three fits. Tongue very furred. Complains of pain in left arm from shoulder to wrist. Repeat every three hours.

March 25.—No more fits. Feeble. Omit bromide. Ordered quinine and cod liver oil.

Thus from February 21 to March 18 was a period of three weeks in which fits were very frequent.

In September 1878 there was a similar period lasting three weeks, in which he had many fits every day. In the intervals between these periods he had about one daily, generally on going to sleep. In the bad periods his tongue was always thickly furred, and there was distinct impairment of grasp in the left hand. No affection of the right hand or of either leg. His speech was always somewhat indistinct, apparently from paresis of the muscles of the lips; but this indistinctness was always worse after a series of fits.

In December 1878 the boy fell against a lamp-post,

striking the right side of his head. The scalp was cut and bled. A scar remained, a little below the position of the first injury according to the unvarying statement of the mother.

On making the mother point out the exact position of the original injury, and then determining the line on the skull corresponding to the position of the fissure of Rolando (according to the directions of M. Fort), it was found that this line passed directly through the spot indicated.

In January 1879 there came another period of three weeks, with very many fits each day.

In April 1879 another period of very frequent fits, lasting four weeks. He had at this time from twenty to thirty fits daily. The mother said that he was decidedly worse than he had ever been before, and neither she nor his father expected him to rally again. On one day towards the close of this period Dr. Lees saw him at home. He lay in a state of apparent unconsciousness (though it was afterwards found that he had understood what was said). He had two fits in less than a quarter of an hour, both very short. No one-sidedness whatever could be discerned in them.

He gradually recovered, and developed a better period, with only about one fit daily.

Thus in the space of fourteen months he had at least four (we think five) periods of great frequency of convulsions, such periods lasting three weeks each, whilst the last continued for four weeks and was more severe than any before. It seemed almost certain that he would have another such crisis after the usual three months' interval, and possible that it might prove fatal.

The question of trephining was therefore taken into consideration. Dr. Ferrier was good enough to examine the boy with Dr. Lees. He satisfied himself of the existence of loss of power in the left hand and in the labial muscles, and demonstrated the fact of tenderness on percussion over the right parietal bone. He agreed that the operation was justifiable, and advised that a spot rather low down in the fissure of Rolando should be chosen, as the centres involved seemed to be those of the lip and arm, and not of the leg.

Six weeks were allowed for the boy to recruit his strength. During this period he had about one fit every day.

He was admitted into Charing Cross Hospital, under the care of Mr. Bellamy, on June 12, 1879. A circumstance of some importance occurred the same afternoon. Whilst

running along the ward, he slipped on the waxed floor, and fell on his left knee. He said nothing about it to the surgeon, but his mother afterwards mentioned the fact that he had told her that he had had a bad fall.

The operation was performed antiseptically by Mr. Bellamy on June 14, the 'ligne Rolandique' having been previously marked out on the shaven scalp, according to the directions of M. Fort; the spot selected for operation being about the centre of this line, and involving the scar of the second injury, but a little below the site of the first injury. While chloroform was being administered in preparation for the operation, rigidity of the left arm and forearm, with hyperpronation of the left hand, was observed.

The piece of bone removed seemed quite natural, but it was noticed that the dura mater bulged up rather tensely into the opening made by the trephine. The advisability of removing a second piece of bone was discussed, but it was thought wiser to await the result of this first removal. The wound was therefore closed, and antiseptic dressings applied, the whole operation having been conducted under carbolic spray.

The temperature that evening was 99·5°.

During the night which followed he had eight short fits. A ninth occurred early the following morning. After this he had no more for eight weeks. This was the more remarkable from the fact that for three years before the operation he had never been free from fits for an entire fortnight.

His condition during the first week after the operation was all that could be desired. The headache entirely ceased after five days and did not recur. On the fourth and fifth days some jactitation of the left upper limb—a kind of local shivering, so to speak—was noticed. The wound was dressed on the third day after the operation, and again on the fifth day. It was perfectly healthy in appearance, and healed mostly by first intention, only the centre of the crucial incision having to be filled by granulations. The temperatures were as follows:—

	Morning	Evening
June 15	100·5°	103·8°
„ 16	99·8°	103·6°
„ 17	102·4°	101·4°
„ 18	100·5°	101·2°
„ 19	99°	100·6°
„ 20	98·6°	99·8°
„ 21	98·6°	99°
„ 22	98°	99°

On the ninth day after the operation, however, the evening temperature began to rise, and the boy began to complain of pain in his thighs. At first he said there was pain in both thighs, but it soon became limited to the left. The pain was much felt in the left knee, but it was also 'all down' the thigh. The temperature ran as follows:—

	Morning	Evening
June 23	98°	100°
„ 24	98°	100·5°
„ 25	99·5°	101°
„ 26	101·8°	103°
„ 27	104·4°	102·4°

At no time were there any rigors. The healing of the wound progressed satisfactorily and uninterruptedly. The pain in the thigh grew worse, and considerable tenderness on handling it was developed.

	Morning	Evening
June 28	100·8°	103·2°
„ 29	100·2°	103°
„ 30	99·4°	103·5°
July 1	100·2°	103°
„ 2	99°	103°

On July 2, sixteen days after the operation, the antiseptic dressings were omitted, the wound being almost entirely healed. The temperature continued at 99° to 100° during the whole of July, and the pain increased. Before the end of the month there was much swelling about the hip joint, and the foot became inverted. It was soon obvious that the head of the femur was dislocated. On August 2, after consultation with his surgical colleagues, Mr. Bellamy excised the head of the femur. There was some pus in the joint, the ligamentum teres was gone, and there was erosion of cartilage over the head of the femur over a surface of about half-an-inch square.

The pain in the thigh was not relieved by this operation. The femur seemed to be tender on pressure all the way down.

On August 8 he had a fit, the first since June 16. From August 8 to 10, there were fifteen fits, and from August 20 to 24, eleven more. It is an interesting question whether these represented the expected crisis at the end of about three months from the last severe crisis in April. If so, it was unquestionably immensely reduced in severity.

A free interval of forty days followed this outburst.

The temperature continued at 99°–100°, and the pain remained. On September 4, an opening was made on the

front of the thigh and pus evacuated: and on the 21st another opening on the inner side. The pain was still very severe. The knee-joint became involved in the suppuration, and on the 29th an opening was made into it. It became evident that amputation alone could save the boy's life, and this operation was performed on October 9, with antiseptic precautions.

He was greatly relieved by the operation and improved rapidly, the wound healing most satisfactorily.

The fits recurred on October 12, three days after the amputation, and in nine days he had thirty-two fits. During this time he was free from pain, eating voraciously, and gaining flesh fast. Between November 6 and 16 he had altogether nine fits. Up to this time no bromide had been given: he was now ordered 7½ grains three times daily. The fits ceased, and he was sent to a convalescent home. Here the bromide was omitted and the fits recurred, but we have unfortunately no note as to their frequency. He was re-admitted into Charing Cross Hospital for observation on March 10, 1880, and was ordered 15 grains of bromide three times a day. After he had been in the hospital three weeks he had another accident, injuring the distal end of the left humerus. With rest and the application of ice this recovered satisfactorily. He was in the hospital for thirteen weeks, and during this time had not a single fit. He was again sent to a convalescent home and the bromide continued. No fits occurred until July 15, making a total free interval of at least seventeen weeks. There was then a relapse, and for eight weeks he had an average of two fits daily, usually on going to sleep. Once he had seven in a day. Since September 10 he has again been free.

We may now contrast his condition, as far as the epilepsy is concerned, during the sixteen months before and during the sixteen months since the operation.

Before the operation he was never wholly free from fits. In his better intervals he had almost always one or two every day. Every three months came a period of three weeks in which fits were very numerous, these periods becoming successively longer and more severe. In the last period of this kind he had upwards of twenty fits daily.

During the sixteen months that have elapsed since the operation, he has passed certainly thirty-seven weeks, probably as many as forty, without a single fit. Four convulsive periods have occurred, but their severity has been enormously

reduced. The fits have never averaged more than two or three daily, and he has never been confined to bed on account of them.

There can therefore be no question that the operation was in very large measure successful. We much regret that a second piece of bone was not removed, involving the spot indicated by the mother, a little higher up the line of Rolando. It was thought wise at the time to see the effect of the first removal, reserving the question of further operation. The unfortunate events which followed rendered a second trephining impossible.

We conclude by suggesting the following points as worthy of discussion:—

First, as to the general question of the use of the trephine in these cases. On this subject we beg to draw attention to an important paper by Dr. Echeverria of New York, 'De la Trepanation dans l'Epilepsie par Traumatismes du Crâne,' published in the 'Archives Générales de Médecine' for November and December 1878.

Dr. Echeverria cites no less than 145 cases in which trephining was used for traumatic epilepsy. He shows that amongst these cases there were the following percentages:—

Cure	64·13	per cent.
Improvement	12·41	„
No change	3·44	„
Exacerbation	·72	„
Death	19·30	„

He maintains that the operation is by no means a dangerous one in itself, provided that no inflammatory symptoms are present at the time. Reference is made to several instances in which earlier operators performed the operation more than twenty times on the same patient. He concludes that the trephine is the only real cure in cases in which epilepsy results from a traumatic lesion of the head.

Secondly comes the question of the cause of the relief undoubtedly obtained in this case by the removal of a piece of apparently healthy bone. It is hard to see to what cause, other than the simple relief of pressure, this can be ascribed. The dura mater exposed by the operation seemed healthy. No point of bone was found pressing inwards to irritate the motor centres. In the case brought before the Medico-Chirurgical Society last winter by Mr. West, of Birmingham, the seat of the lesion was in the frontal region, and therefore far away from the motor centres; yet the removal of two

pieces of bone, in which the inner table was found normal, was followed by complete recovery of the patient from an almost idiotic condition, and by the absolute cessation of the fits, which till then had been numerous and severe.

In our case it seems likely that if a larger area of bone had been removed, the relief would have been more complete and permanent.

Thirdly, we wish to enquire whether the periodicity which has formed such a marked feature in the convulsions in this boy, is usually found in cases of epilepsy due to irritations of the brain cortex?

There is a case of traumatic epilepsy recently admitted into the Hospital for Sick Children, in which the same phenomenon is observed. The mother states that the child (a girl of 11) has periods of a week in which fits are numerous, followed by intervals of a fortnight in which she is almost or entirely free—such periods and intervals recurring with much regularity.

There is also a child who has been brought frequently to the same hospital during the last three years, who illustrates the same condition. She was first brought at 10 months of age on account of fits, and it was then found that the fontanelle was absent, and the mother stated that it had never been present.

In course of time left hemiplegia with rigidity became established, and the left limbs were much retarded in growth. The right limbs were the subject of occasional clonic convulsions. She had very numerous fits. She was sent to Dr. Ferrier for further opinion, and he agreed that the seat of lesion was probably cortical.

In this case also the fits occurred in groups, a period of intensity being followed by an interval of nearly complete absence of fits, in which the child gained flesh and showed some intelligence. The intervals here, however, were not so regular as in the two former cases.

Fourthly, there is the question whether the osteomyelitis of the left femur, which undoubtedly followed the operation, is to be considered in any sense the result of it, or was an accidental coincidence and due to the fall? Is there any truth in the surgical tradition that suppuration in a long bone is apt to follow the operation of trephining? Was there any pyæmic element in this case?

On this point we would remark that the operation and subsequent dressings were conducted under careful antiseptic

precautions, that the wound was always perfectly healthy, and healed mainly by first intention, that the boy's general condition for eight days after the operation was entirely satisfactory, the temperature gradually coming down to normal, that the rise of temperature which then occurred was gradual during four days, and was not accompanied by rigors, and that no other joint or part of the body was affected except the left hip-joint and the left femur. We submit that this cannot fairly be considered the history of a pyæmia.

V.—*On Cross-legged Progression (Scissor-legged Deformity), the result of Double Hip Anchylosis.* By R. Clement Lucas, B.S. *Read October* 22, 1880.

THE object of this paper is to direct attention to a peculiar and characteristic gait, which is brought about by disease and consequent anchylosis of both hip-joints.

Disease of both hip-joints is rare, and recovery after such double disease so uncommon, that it is probable the deformity and peculiar mode of progression which follows may have been hitherto overlooked.

I have searched diligently in general surgical literature and in special books on deformities and pathology, without discovering any reference to this curious result of disease affecting both hip-joints in the same person.

In the two cases which I have to bring forward the disease commenced first in one hip, and had existed there for some time before the other was attacked. It is fair to conjecture, from the history, that anchylosis had taken place in the hip-joint first attacked, before the disease had progressed far in the other. The patient was allowed to walk with the aid of crutches or sticks, bearing his weight on the convalescent limb; and gradually the limb last attacked was carried across the other. I leave it open to discussion how this is brought about, whether as the result of the adduction so common in the course of hip-joint disease, or whether as a gradually-developed, perhaps unconscious, action on the part of the patient, with the object of placing his limbs in the position most favourable for progression. My own opinion tends to this view; the patient, when commencing to walk on the convalescent limb, finds that by resting the other

upon it, he can steady the inflamed hip and prevent the movements which cause him pain. At the same time, by the oblique position, the limb is shortened and rendered less liable to touch the ground. When walking with the aid of crutches upon the recovered limb, the popliteal space of the other lower extremity rests upon the patella, and the limb thus supported swings from the knee. As recovery goes on in the second hip, the patient from time to time tests its condition by dropping the supported foot to the ground and bearing a little weight upon it. Gradually he takes more and more weight from the crutches, still retaining the limb in the oblique position, and finally, the second hip having become anchylosed, he is able to throw aside his crutches and walk in the peculiar manner which these two patients illustrate.

It is interesting to note how the patient thus finds out for himself the only position in which it is possible to walk unaided when both hips are anchylosed. For, supposing them to become fixed and parallel, it will be found that the movement of the knee is useless for forward progression, and that the only way in which advance can be made is by twisting first one side of the body, then the other, to the front.

The patient in the cross-legged position walks from his knees, using these joints in lieu of his hips. For ordinary walking, the forward movement takes place entirely from the hip, and the bending of the knee serves only to shorten the limb and prevent the foot striking the ground when it is carried forward. Hence a man with an anchylosed knee-joint is seen to lean to the sound side and carry the stiff limb in a semicircle forward to prevent the foot striking the ground, but the stiff joint does not shorten his stride; it only gives him an awkward gait, and tires him by putting excessive strain on certain muscles, ordinarily but little employed. The knee-joint bends in the wrong direction for forward progression; and it is only by altering its direction, so that the foot points obliquely, that the forward movement is attained. In this way we get knee-walking instead of the usual hip-walking.

If we examine this mode of progression more precisely, we shall observe that when standing the toes of each foot are directed towards their own side of the body, as is usual when standing at attention; but that, owing to the legs being crossed, the toes, instead of diverging, converge, and the

heels are wide apart. In taking a step, the right foot is carried obliquely forward and to the right, and the weight of the body being then thrown on the right limb, the left foot is brought forward till the toe is on a level with that of the other foot. By a succession of these movements the patient can progress with moderate speed.

The following are the histories of the two patients:—

Case I.

F. G., æt. 10, when four and a half years of age, had a fall and was subsequently noticed to limp on the left leg. He attended as an out-patient, under the care of Mr. Lucas, for two years, and was treated with weight-extension for some time, and afterwards with a leather support applied so as to fix the hip.

About fifteen months later he had another fall, after which the right leg became affected. He continued under Mr. Lucas's care until June 7, 1877, when he was admitted into the Evelina Hospital, under the care of Mr. Morrant Baker. Weights were applied to each leg. On Sept. 19 he was discharged. At this time the left thigh was found fixed on the pelvis in a position of slight flexion and adduction. There was slight movement in the right hip, and thickening of the tissues around the joints.

For twelve months after his discharge he was kept lying as much as possible. He then began to walk a little with the aid of crutches, but did not at this time cross his legs. Six months later he went into the country, where he remained four months, and on his return he was noticed to cross his legs. His general health had much improved. He was again brought to see Mr. Lucas, because his legs were, as his mother expressed it, like a 'pair of scissors' (plate i., fig. 1). When walking cross-legged he usually rested his hands on his hips.

In November 1879 it was noted that when standing he rested most of his weight on the left leg. There was some lordosis when lying, increased when standing. The pelvis moved with the thigh on both sides, but there appeared to be still slight movement in the right hip. Both hips in this boy have undergone pathological dislocation. The slight movement in the right hip remains (October 1880), and is sufficient to show that the anchylosis on this side is not osseous.

1.

2.

3.

Mintern Bros.lith.

Mr Clement Lucas's Cases of Cross-legged Progression

Case II.

D. P., æt. 47, first began to suffer pain in the left hip in 1870. He was at this time employed as a coal-heaver. He sought advice at St. Thomas's Hospital, and afterwards at St. Bartholomew's. Subsequently he spent thirteen months in the Dalston Infirmary. The pain extended from the hip to the knee. After leaving Dalston he tried to work a little for a year, but remained lame. Since that time he has obtained his living by hawking collar-studs and other trifles in the street.

In September 1879 he began to suffer pain in the right hip. It had formerly been his custom to rest most of his weight on this limb, but the pain now caused him to stand chiefly on the left leg. In the course of the winter he got into the habit of crossing his legs, but at first was able to unlock them at will. Later he used to unlock them at night time, when he retired to sleep, but gradually this became impossible.

It happened one day that I saw this man walking in the street, and, interpreting his condition by the light of the other case, I asked him to come to Guy's Hospital to be examined. I then found, as I anticipated, that he was suffering from anchylosis of both hip-joints, and that the peculiar cross-legged progression was the result of this double disease (plate i., figs. 2 and 3).

It will be noted that the deformity may result from totally distinct diseases of the hips: for in the boy the disease was, doubtless, ordinary pulpy or strumous synovitis, which went on to absorption of the head of the femur and dislocation, without suppuration, on each side; whereas, in the man, the disease was probably osteo-arthritis. Further, it should be observed that dislocation bears no causative relation to the deformity, as might have been concluded if the boy had been the only case seen; for though dislocation had in his case taken place on each side, the hips of the man showed no dislocation.

Report on Mr. Lucas's case of Cross-Legged Progression.

Having had an opportunity of thoroughly examining the elder of the two patients brought before the society by Mr. Lucas, we have to report that the heads of the thigh-bones are not dislocated from their sockets. Both hip-joints are firmly fixed in their abnormal positions, but whether the ad-

hesions are capable of being broken down can only be decided by putting the patient under an anæsthetic and making the attempt, which we would recommend prior to any more serious proceedings.

CHRIS. HEATH,
JOHN CROFT,
R. CLEMENT LUCAS.

VI.—*Case of Intestinal Obstruction caused by a Hernia through the Mesentery of a Meckel's Diverticulum, which had retained its Attachment to the Umbilicus.* By EDWARD HEADLAM GREENHOW, M.D. *Read October* 22, 1880.

MASTER F. A. K., æt. seven years, an intelligent, active child, was seized suddenly late in the evening of May 31, 1880, with severe stomach-ache. His health had always been good, but he had sometimes previously suffered from abdominal pain. His bowels had been well moved during the previous day, and he had been in his usual health and spirits until after tea. He distinctly referred the pain to the situation of the umbilicus and continued to do so throughout his illness. The pulse and temperature were normal, and a careful examination of the abdomen yielded negative results. A dose of syrup of senna was administered, but the pain became worse during the night and a laudanum and linseed poultice was applied over the abdomen. The pain continued more or less all the following day, and was only partially relieved by the poultices and by small doses of opium given by the mouth. The bowels were not moved.

Early in the morning of June 2, he vomited some curdled milk tinged with bile but quite inodorous. At 4 P.M. of the same day I first saw him. His pulse was then 95, of good volume and character; temperature 100·5°. There was very slight tenderness on pressure just above the umbilicus, but there was no distension of the abdomen, and he bore firm pressure well over its general surface. The resonance on percussion was very slightly impaired near the crest of the ileum, on the right side, but no tumour or other abnormal condition could be detected. The urine was of high specific

gravity, scanty, and passed with some difficulty; it contained an excess both of lithates and phosphates, but was in other respects perfectly normal.

I prescribed a quarter of a grain of extract of belladonna to be given every four hours, advised the poultices of laudanum and linseed to be continued, and recommended a large enema of soap and water, with two ounces of olive oil and half an ounce of oil of turpentine, to be slowly administered. His diet was restricted to milk, eggs, and Brand's essence of beef, but the latter was soon discontinued as it was found to produce sickness.

The enema brought away some small masses of hardened fæces and seemed to give much relief, for the little patient was able to sit upon the night-chair quite comfortably. It was afterwards, however, observed that he was usually at ease when in the sitting posture.

June 3.—The pain again became severe about 2 A.M., and small doses of tincture of opium were combined with the extract of belladonna. The pain was still referred to the immediate neighbourhood of the umbilicus. There was now perfect resonance near the crest of the right ileum, slight, though by no means marked, dulness on percussion over the left iliac fossa. The pulse was about 95, and the temperature rather under 100°. Another large enema was administered, after which the child became much easier and slept for some time in his mother's arms.

The dose of extract of belladonna was increased to one third of a grain, and nutritive enemata consisting of beef-tea, egg, and brandy, with three drops of tincture of opium in each, were directed to be given every four hours; the administration of food by the mouth being restricted to milk and lime water and small quantities of egg and brandy.

In the evening of this day the patient had a few hours of comfortable sleep, and when the paroxysms of pain supervened they were, to a great extent, relieved by small doses of laudanum. There was still no general tenderness or distension of the abdomen. Pulse 105; temperature 99·6°. The bowels did not act and there was no vomiting.

June 4.—During this day the patient remained stationary, but in the evening there appeared to be some improvement and he had a good deal of quiet sleep. Pulse 100; temperature 99·8°. Until this day the urine had been passed with difficulty, and sometimes only when he was placed in a warm bath; from this time it was passed with ease.

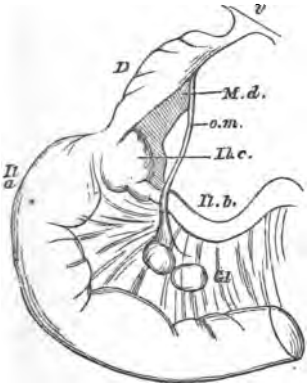
June 5.—At my first visit, at 9 A.M., the little boy was quite free from pain and appeared in all respects much better. The abdomen was soft and free from tenderness, but the bowels had not acted. A large enema of oil and soap and water was administered, which brought away a very copious, loose, feculent stool, containing some small lumps of hardened fæces. The pulse was under 90; the temperature 99·0°. He asked for bread and milk, and in the course of the day said that he would like some meat. Neither bread nor meat was, however, allowed to be given. He continued cheerful and free from pain until the evening, when the abdomen became slightly tender and tense, and the pulse rose to 115 and the temperature to 101°. About 10 o'clock P.M. he began to vomit a brownish-coloured fluid, closely resembling beef tea, and his stomach immediately rejected even milk, which had hitherto been retained. The liquid vomited was quite inodorous. There was not much pain until the middle of the night, and he slept at intervals.

June 6.—The abdominal pain gradually increased during the night and was very little relieved by opiates, all food, medicine, and even water, for which he craved, being at once rejected. The matters vomited continued free from fæcal odour. At 4 A.M. a large enema was given, which brought away a few small portions of fæces and a very large quantity of very feculent smelling fluid, but did not, as on former occasions, relieve the pain. When I saw the patient, at 9 o'clock A.M., his countenance was anxious; skin cool and rather clammy; tongue much furred and very dry. Pulse 130; temperature 99°. Abdomen tense, exquisitely tender and tympanitic. The coils of inflated intestine were visible through the abdominal parietes. The vomited fluid was slightly grumous, but free from odour; and the liquid brought away by the enema contained some small particles of blood-stained mucus.

I recommended subcutaneous injections of morphia and atropia to be given, with a view to relieving the severe pain, and warm fomentations of laudanum to be applied over the abdomen. Wandering of mind soon came on, and the child gradually sank during the day, and died at 7 P.M., after bringing up a quantity of dark inky-coloured fluid.

Post-mortem Examination.—This was made, twenty-four hours after death, by Dr. Coupland, in the presence of Dr. Lendon and myself. On opening the abdomen, the ileum was seen to be much distended; there was commencing

general peritonitis, as evidenced by the vivid vascular injection of the coils of intestine along their contiguous borders, and a slight amount of agglutination; but there was no lymph nor any effused fluid. Attached to the abdominal wall, opposite the umbilicus, was a fibro-fatty cord, half-an-inch in length. This passed on to the extremity of a well-developed Meckel's diverticulum, which was nearly equal in calibre to the ileum from which it sprang. Except for the attachment at the umbilicus, this diverticulum was free for the space of 2 inches; but the remaining inch and a half, together with several coils of collapsed ileum, appeared to be included within a ring-like opening situated in the diverticular mesentery. On examination this ring was found



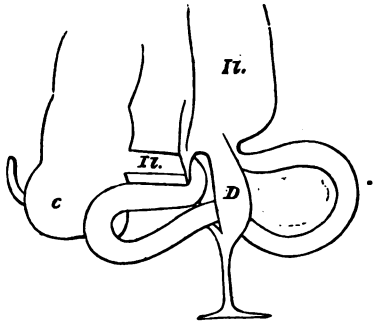


FIG. 1.—Ileum with its diverticulum unravelled. U. The umbilicus. D. Diverticulum. Md. Mesentery of diverticulum, attached for part of its course to O.M., a fibro-fatty cord, probably the remains of the omphalo-mesenteric vein, which passes on to the general mesentery and is there lost. Il. a. Ileum above diverticulum. Il. b. Contracted portion of ileum below. Il. c. Portion between diverticulum and cord, curiously pouched. Gl. enlarged mesenteric glands.

FIG. 2.—Diagram representing method of strangulation. Il. Ileum. C. Cæcum. D. Diverticulum.

to be mainly formed by a loop-like fibro-fatty cord (of the thickness of whipcord), passing from the diverticulum above to the general mesentery across the ileum.* This cord

* A diverticulum of this kind is always provided with a small mesentery—a triangular fold of serous membrane passing between the diverticulum and the unattached border of the ileum, just beyond the origin of the former. In the present case this 'diverticular mesentery' was of unusual size, and had been bounded by the cord above mentioned, which from its situation corresponded to the remains of the omphalo-mesenteric vein. The ring had been produced by this cord

measured 3¼ inches where it tightly encircled the included gut, the diverticular mesentery being detached from the cord for this distance, and thrown into folds. The appearance presented was very singular; for two sets of coils of collapsed and empty bowel depended on each side of the cord, as if the gut were strangulated in two places. The actual condition, which was only seen after completely unravelling the parts (see figs. 1 and 2) proved to be as follows:—

The whole portion of collapsed gut measured 20½ inches. Of this a portion 9½ inches long, reaching to within 2 inches of the cæcum, had actually *passed* through the ring, the remaining 11 inches belonging to bowel which intervened between that included in the ring and the diverticulum. Opposite to the diverticulum, however, where the ileum was curiously pouched (on the diverticular side of the cord), a knuckle of bowel had been forced through the ring, thus completing the strangulation. This knuckle of gut was of a dark purple colour, and, as previously stated, had dragged with it the lower end of the diverticulum, the rest of the collapsed coils being pale.

The ileum above the strangulation was distended with fluid fæcal matter of a pale yellow colour. The constriction ceased at a point 1¾ inches above the ileo-cæcal valve. The cæcum was lying nearer to the spine than natural, and its appendix vermiformis, passing up behind the bowel, was almost concealed from view. The cæcum only contained a few small lumps of fæces.

The length of the fibrous cord at the extremity of the diverticulum was half-an-inch; the non-strangulated portion measured 2 inches, and the strangulated portion of the diverticulum 1½ inches. The whole length of the diverticulum was thus 4 inches; it arose about 22½ inches above the ileo-cæcal valve. The other abdominal viscera were healthy, but the mesenteric glands were slightly enlarged.

Remarks.—I have been unable to find on record any case exactly similar to the above, and have therefore considered it worthy of being communicated to the Clinical Society. When I first saw the little patient, there being neither sickness, distension, nor general tenderness of the abdomen, I

not being attached to the diverticular mesentery through its whole length; but whether this detachment had been acquired or had been present from the first, could not, of course, be determined. The belief was that an actual rent had occurred.

considered that the case was neither one of intus-susception nor of inflammation of the appendix vermiformis. Indeed, no distinct evidence of the presence of peritonitis supervened until the day before death. It was obvious that the peristaltic movements of the intestines were suspended, but there was not complete obstruction; for the enemata brought away fæces even so late as the fifth day of the illness. The very manifest improvement on the evening of June 5 led me to hope that the case might still terminate favourably. This hope I abandoned, however, as soon as I found unmistakable evidence that peritonitis had set in.

It is quite evident, from the history I have related, that a serious change in the local conditions, leading to complete strangulation, took place in the course of Saturday, June 5: in the morning of that day the child was lively and inclined to be active, having jumped up in bed to greet me when I entered his room; in the evening he was in great suffering, had almost constant vomiting, and his abdomen was so tender that he could scarcely bear it touched. From this history I apprehend that a considerable portion of intestine had passed through the ring at the beginning of the illness, but that the strangulation was not complete until the evening of June 5, when the more urgent symptoms supervened.

Two features of the case deserve to be more particularly adverted to on account of their possible bearing upon the diagnosis of any future case of the same description. I refer to the very remarkable relief experienced whilst the patient was sitting up, and to the situation of the pain. The relief obtained by sitting up was probably due to the fact that, in that position, the viscera were thrown forwards towards the abdominal parietes; whereas when the patient was lying upon his back, it may be presumed that the cord attached to the umbilicus was borne upon by the mass of intestines which had passed through the ring. Until the setting in of general peritonitis, the pain was invariably referred by the child himself to the same situation, a point just above the umbilicus and, therefore, close to the place at which the cord-like extremity of the diverticulum was attached.

The only explanation I can offer of the mode in which the hernia took place is by supposing that in some active movement a small portion of bowel had passed through the loop without becoming actually strangulated. This would interrupt the peristaltic movements and account for the

absence of defæcation excepting when the bowels were washed out by enemata. A further portion, including probably that part of the diverticulum which was so intensely injected, had, I suppose, passed through in the course of Saturday, June 5, which, becoming strangulated, led to the fatal result.

The propriety of opening the abdominal cavity for the purpose of searching for the cause of obstruction did, of course, occur to me, but, on consideration, I felt that I could not have advised such an extreme procedure during the early days of the illness; and when at length more serious symptoms supervened, collapse and death very rapidly followed. Neither, looking at the result of the post-mortem examination, do I think the operation could have proved effectual. No doubt the cord attached to the umbilicus might have been discovered by the finger of the operator and divided. But even if this had been successfully done, I scarcely think the strangulation caused by the loop of mesentery could have been relieved. In conclusion, I beg to acknowledge the use of some careful notes of the case kept by Dr. Lendon, which have supplemented my own notes in several important respects.

VII.—*A Case of Nephro-lithotomy; or the Extraction of a Calculus from an Undilated Kidney.* By Henry Morris. *Read October* 22, 1880.

In the case now to be related nephro-lithotomy was performed. I use the term nephro-lithotomy as being the most appropriate for the operation of cutting a stone out of a kidney, which, so far as can be ascertained by clinical examination, is not dilated or otherwise altered in form; and which, but for the presence of the stone, is presumably healthy; the sole object of the operation being therefore to cure the patient by extracting the offending cause—the renal calculus.

This term, besides expressing the intention and method of the treatment, is to be recommended all the more since nephro-lithiasis is the name already in use to designate the presence of calculi, or calculous material, in the kidney.

Moreover, since the term nephrectomy has been applied

to removal of the kidney, and nephrotomy, from very ancient times, to the operation of cutting into a distended kidney for the evacuation of fluid which has accumulated there, whether as the result of a renal calculus, of tuberculous disease, or some other cause, a name was wanted to express *incision of the kidney simply and solely for the removal of a renal calculus.*

In all times authorities on the subject of renal calculus have sanctioned the removal of the stone or stones when felt by a probe passed into an existing sinus. In the 'Memoirs of the French Academy of Surgery,' cases of this kind are described, and more recently Annandale* and others have recorded similar ones.

Through many centuries, from the time of Hippocrates downwards, it has been considered justifiable and proper treatment to attempt the removal of renal calculi through an incision into the kidney, *as soon as the calculus has set up suppuration of the kidney so as to lead to pointing of an abscess in the loin, or to the existence of an external swelling.*

Nephrotomy in this sense has been performed frequently since 1872, when Dr. W. W. Dawson, of Cincinnati, removed a small calculus from a suppurating kidney which he had previously tapped. It has been done by the late Mr. Callender, by Mr. Hutchinson on the person of the late Mr. Startin, by Mr. Cullingworth of Manchester, by Mr. E. Hooper May of Tottenham, by Mr. Alfred Barker at University College Hospital, by Mr. Couper at the London Hospital, and, within the last few weeks, at the Middlesex Hospital, in a very successful case, by my friend and colleague Mr. Andrew Clark. Dr. G. A. Peters of New York, in 1872, also cut into the kidney of a man æt. 36, in whom a confident diagnosis of stone in the kidney had been made; the kidney was greatly disorganised from tuberculous disease, and was at once removed; no stone was found. Mr. Bryant, and Dr. Crane, of Bellevue Hospital, have performed nephrotomy for nephritic abscess, Mr. Bryant on two or three occasions.

But the plan of incising an undilated kidney through an opening in the loin, and in this way removing a renal calculus at a comparatively early period in the disease, and before the kidney has become greatly disorganised, has scarcely even been entertained by any surgical author, except Bryant.†

* *Edinburgh Medical Journal*, July 1869.

† Bryant, *Practice of Surgery*, 3rd ed., vol. ii. p. 57.

Benjamin Bell, Brodie, Samuel Cooper, Chelius, Copland, Gross, Rayer, Rossetus, Syme, Velpeau, and Joseph Warren,* besides others in both ancient and modern times, considered the extraction of renal calculi feasible only when the stone can be felt by a probe in a sinus, or when there is a distinct external tumour.

Some of the above-named authors draw a sharp distinction between nephrotomy and what I have called nephro-lithotomy. For instance, Bell † says: 'Upon the whole we may therefore conclude, that when not directed by the appearance of a tumour to the part that ought to be opened, the uncertainty of the ground upon which we proceed when we undertake this operation, the difficulty of performing it, and the very imminent danger that attends it, will more than counterbalance any advantage that can be derived from it; so that the operation of nephrotomy will never probably be received into general practice, however much it may be recommended by some, who, in order to raise a reputation which they might not otherwise obtain, will sometimes step forward and propose with confidence what no practitioner of character would think right to attempt.' Mr. Samuel Cooper, in the 'Dictionary of Surgery,' (5th ed., 1825), says: 'There is no doubt that stones have often been extracted from abscesses about the region of the kidney, after being touched with a probe. With regard to cutting into the kidney, the deep situation of this viscus and the want of symptoms by which the lodgement of a stone in it can be certainly discovered, will always be strong objections to the practice. But when a stone, from its size, cannot pass from the kidney, and excites inflammation and suppuration, no doubt the surgeon may make an incision into the tumour, and extract the calculus. In this sense nephrotomy is certainly a practical operation.' Here we have the distinction between the two operations well brought out, and nephro-lithotomy condemned, but nephrotomy sanctioned. Sir Benjamin Brodie has written: ‡ 'Some of the old surgeons have spoken of an operation for the extraction of calculi from the kidneys. The proposal is absurd and dangerous if made with reference to ordinary cases of renal calculi, where no abscess exists. But nephrotomy (as it has been termed) is very practicable where nature, by the formation of an abscess, has pointed out the

* Warren, *Cases in Surgery*, Lond. 1784.

† Benjamin Bell's *Surgery*, vol. vi. p. 213, 1801.

‡ Brodie, Lectures on 'Diseases of the Urinary Organs,' 1832 Ed., p. 184.

exact situation of the calculi, so that they may be felt by means of a probe.' Even Mr. T. Smith,* though an advocate of 'nephrotomy as a means of treating renal calculus,' writes: 'I imagine that no prudent surgeon would willingly cut freely into the secreting structure of an undilated kidney for the removal of a stone; but would hesitate to attempt the extraction of any stone that appeared fixed in the substance of the organ, and that could not be approached through the hilus. In a kidney much dilated, however, the amount of secreting structure to be cut through to reach a stone might be reduced to a very thin and but slightly vascular layer.' Again, one of the most recent writers on nephrectomy and nephrotomy, Dr. W. Heineke,† mentions renal calculus as one of the indications for incision of the kidney; but he goes on to say that incision is only practicable when there exists an expansion of the pelvis of the kidney in the shape of a tumour. If the pelvis is only slightly expanded, incision of the kidney cannot, he considers, be undertaken, because it is not then possible to cut into the pelvis of the organ through a lumbar wound without incising the secreting substance; and, owing to the great vascularity of the kidney, an incision of this substance may lead to alarming and probably fatal hæmorrhage. Hence he concludes that the incision into the pelvis of the kidney must never be made through the substance—at least not as long as this part of the organ is in a normal condition.

These references are sufficient to show that the question suggested by the mere name nephro-lithotomy is one which has hitherto been answered almost universally, and often contemptuously, in the negative. This question is: Is it feasible, and if feasible is it safe, or at any rate unattended by more than an ordinary amount of risk, to remove a renal calculus from a kidney which is not dilated, and therefore before the life of the patient is seriously threatened by chronic suppuration or other evil results of obstruction to the excretion of urine?

Dismissing from our consideration the operations of nephrectomy and nephrotomy, this is the question to which I wish to call attention, and which the following case assists us to answer.

And here I desire to state that it is entirely owing to my

* *Medico-Chirurgical Trans.* vol. lii., 1869, p. 222.

† Heineke, *Handbuch der allgemeinen und speciellen Chirurgie:* Pitha & Billroth, 1879; and *Medical Times and Gazette,* October 16 and 23, 1880.

friend and colleague, Dr. Coupland, that now for the first time in the history of surgery a thoroughly authentic case can be referred to as evidence of the practical success of the operation. It was through his advice that the patient consented to undergo the operation, and at his suggestion that I performed it.

A precedent of undoubted authenticity had been much needed to give encouragement to the treatment. Surgeons do not seem to have been convinced by Marchetti's operation, doubtless partly for the reason that he does not appear to have referred to it in his own writings; and that the description which has come down to us was written by one * who was not a medical man, and to whom the facts were not narrated until ten years after the event. If this operation by Dominicus de Marchetti of Padua, upon the English Consul, Mr. Hobson, towards the end of the seventeenth century, consisted, as is believed by some, in the removal of calculi which could be felt through a sinus in the loin; or, as is thought by others, after laying open an abscess of the kidney; then there is no ground for belief that nephro-lithotomy has ever before been performed. What the operation was which is said to have been performed by Mr. Paul of Stroud † in 1733, is almost as uncertain as the case of the French archer, who, according to some authors, lived under Charles VII., and to others under Louis XI.; and on whom, according to some writers, nephrotomy was performed,‡ to others the high operation for stone,§ and to another ‖ the perineal operation. Paré refers to the archer's case, and from his account it is certain that the kidney was not cut into. A fourth case, which has crept into the history of the subject, has never had any influence on the question at all; it is that of a 'woman who, having for a good while been afflicted with a load and a pain in the region of her kidneys, scratched with that rage and impatience so long with her nails, till she made a wound so large and deep as to discharge eighteen stones.' ¶ Possibly the question might have been discussed in the schools of surgery by Cousinot in the middle of the seventeenth century, and again by Masquelier and Borden in the eighteenth.** Sir Astley Cooper, too, may have been

* Charles Bernard, F.R.S., *Philosophical Transactions*, vol. xix. p. 333, 1696.

† *Gentleman's Magazine*, August 1733. Also referred to by Mr. W. Wadd, Surgeon Extraordinary to the King, in '*Maxims and Memoirs*,' p. 21, Mems.

‡ Mézerai and Collot.

§ Rousset, and Sprengel, and Haller.

‖ Méry.

¶ Bernard, op. cit.

** *Ve* vol. iii. Mott's Edition. p. 1020.

referring to the operation when he wrote: * 'Mr. Cline informed me that a patient consulted him who had this disease in whom he could distinctly feel the stone by pressing on the loins; the patient's general health would not at that time bear an operation, otherwise Mr. Cline would have removed the stone by incision.' The state of the patient's health, and the, probably, large size of the stone here indicated, make it more likely that the kidney was disorganised by long-standing suppuration.

In July 1869, however, Mr. Annandale published a paper † advising the operation in suitable cases; and since that date an incision has been made *down upon* the kidneys in four cases, in which there was *no suppuration and no tumour* (Gunn's and Durham's in 1870, Annandale's in 1875, and another of Annandale's subsequently), with the object of removing a calculus, but no calculus was found. In two other cases in which also there was *no tumour* (Lente's, of Cold Spring, N.Y., and Barbour's, of S. Norwood, Conn.) the kidney was actually *cut into* with the same object, but with the same result; though in one (Barbour's) a small quantity of pus was liberated by the incision. Though in all these six cases the operation was abortive, still in all it was encouraging in this respect, that the patients made good recoveries from it, and, curiously enough, obtained, at least for a time, some relief from their symptoms.‡

For the notes of the following case I am indebted to Mr. J. M. L. Davies, Dr. Coupland's resident-assistant; to Mr. James, the then House-Surgeon of the Middlesex Hospital; and to my dressers, of whom Mr. Harratt should be specially mentioned.

Case.

Maria M., æt. 19 years, a domestic servant, was admitted into the Middlesex Hospital, under Dr. Thompson, on April 3, 1879, with the symptoms of renal calculus. Her family history was good, and showed no tendency to gout or

* *Principles and Practice of Surgery*, vol. ii. p. 222, 1825.

† *Edinb. Med. Journ.*

‡ Gunn's patient was a male—relieved for 6 weeks.
Durham's ,, ,, female, æt. 41—relieved for a time, nephrectomy after [2 years.
Annandale's ,, ,, female, æt. 36—cured.
Lente's ,, ,, recovery for 2 years.
Barbour's ,, ,, female, æt. 35—relieved, but died in 1 month.
Annandale's ,, ,, male, æt. 50—cured.
Golding Bird's patient was a male (boy)—relieved for a short time; subsequently cystotomy and again relieved; result unknown.

calculous disorders. She had never had any decided illness until about four years before, when she had a slight attack of erysipelas of the face, followed shortly by an attack of mild scarlet fever; but since she was eight years of age she has had pain on and off in her right side attributed to 'growing pains.' The pain was sometimes severe and paroxysmal, darting across the back and down the hips; when worst she felt sick and sometimes actually vomited. Thus things continued until September 1878, when she began to complain of chilliness, followed by shooting pains in the right lumbar region, so that she sought relief at a metropolitan hospital and was blistered, but without benefit. Her condition compelled her to give up her situation. About this time she experienced some swelling of the eyelids, and stiffness about the face and legs, which, to use her own words, were 'spongy.' Menstruation was regular. When the pains were most severe, and they were always aggravated by hard work, her urine was of a very dark colour, though unaltered in quantity, and passed without difficulty.

She is described as a well-nourished, rather stout, short girl, with florid cheeks, but slightly pallid mucous membrane. Her skin felt dry, harsh, and hot; she never sweated except about the head; the skin was scaly, especially on the limbs, but more or less over the whole trunk and face; it had been so as long as she could remember. On admission she complained of paroxysmal pain in the right side of the abdomen, from the loin to the groin, sufficient to keep her awake at night; and she was passing urine of a dark red colour, yielding a dark red brown deposit, and containing blood and one-fifth albumen. There was no tenderness or sense of resistance at the seat of pain. There was a little œdema of the face, but none of the legs. She had a dry cough and some shortness of breath, due to slight bronchitis. Some relief was obtained by warm baths and alkalies, but she continued to have pains in the right loin and to pass a little albumen in the urine up to the time of her discharge on May 27.

A return to domestic service soon brought back her symptoms in all their severity; a life of activity became unendurable, and she was again admitted, this time under Dr. Greenhow, on Oct. 13, 1879. The pains in the right groin and loin were so severe as to prevent sleep; there was now some tenderness on palpation; the urine contained much blood intimately mixed; and the skin presented much the

same general characters as before, and was desquamating in large scales. After a week of treatment and complete rest blood ceased to be passed in the urine. A trace of albumen was from time to time detected, but no casts or crystals. By November 4 all trace of albumen had disappeared, the pain was relieved, and she was sent to Epping Convalescent Home. A fortnight after going there the pain once more returned, and blood was again passed with the urine, so that she came back to the hospital and was admitted, under Dr. Coupland, on December 29, 1879. At this time her urine was almost as dark as porter, gave an acid reaction, but contained no other abnormal constituents than blood. Some tenderness was complained of when firm pressure was made in the right loin. In a few days the urine was free from blood and all deposit, and was clear, but continued to exhibit a trace of albumen. Day after day she suffered pain in the right side, sometimes very severe, and always aggravated by walking about the ward; the urine remained on the whole free of blood; she took citrate of lithia in 8 grs. doses from January 6, 1880, onwards. The nephralgia was not relieved. On February 2 the patient was put under chloroform, and Dr. Coupland endeavoured to examine the kidney with his hand passed along the rectum; but in spite of steady and prolonged pressure he found it impossible to insert his hand beyond its widest part. The girl knew too well what her sufferings had been, especially during the last eighteen months, and how completely they unfitted her for active life. She was most willing that some radical measure should be resorted to for her benefit, and it seemed unjust not to give her the chance of relief that an operation might afford. Accordingly she was taken to the operating theatre at 1.30 on February 11, it being quite understood that an incision should be made down upon the right kidney, the kidney examined with the finger in the wound, and if thought necessary, with a fine aspirator needle used as a probe, but that the kidney itself should not be cut into unless encouragement was afforded by such examination. Chloroform administered, an oblique incision was made in the right loin as for colotomy. After cutting through the muscles and fasciæ, the fatty tissue usually seen in colotomy at once came into view and was held aside by three of Croft's retractors, one placed upon each edge of the wound, and the other used to draw inwards the quadratus and erector spinæ muscles. This done, a thin but distinct

and tough areolo-fibrous envelope was seen and incised, whereupon a quantity of very fine, soft, pale-yellow fat at once bulged through the opening in this envelope. This fat, which presented a very striking difference in colour and texture from the lumbar fatty tissue about the colon, was teased open and the index finger of the right hand was passed amongst it over the posterior surface of the kidney.

With my left hand on the front of the abdomen pressing the kidney backwards into the loin, my right index finger almost immediately detected something rounded, about the size of the uncut end of a pencil, causing a slight irregularity of the surface of the kidney at a spot just a little behind the hilus. An attempt was now made by withdrawing the finger and readjusting the retractors to bring the kidney into view, but owing to the depth of the loin, and the quantity of fat therein, this was quite impossible. I therefore again introduced my right index finger, and with a straight probe-ended bistoury passed along it, incised the excreting substance of the kidney at the projecting part; the kidney meanwhile being kept well pressed back in the loin by the hand of the house surgeon placed on the abdomen. With a slight scooping movement of the point of the finger, after withdrawing the bistoury, a stone was easily removed through the opening thus made in the kidney, and lifted out through the external wound. It was very easy to distinguish where the kidney structure overlapped the funnel-shaped upper end of the ureter; but as this latter was quite flaccid, and not enlarged, and the calculus could not be felt there, it was not interfered with. No attempt was made to examine the front surface of the kidney. There was no hæmorrhage of the least consequence at any stage of the operation. The wound was 4½ inches long from end to end, and was brought together by three silk sutures. A decalcified bone drainage tube was introduced between the middle and hinder sutures, and a rib roller was applied to keep the dressings in place.

The stone (see Plate IV., fig. 1), which is of the mulberry variety, weighs 31 grains, and is triangular and flattened in shape: the two corners of its base probably projected beyond the calyx in which it was fixed, whilst the smooth polished surface at its blunted apex was opposed to the papilla or papillæ of the corresponding pyramids, and to the flow of urine from them. The surfaces and borders of the calculus are studded with numerous minute pointed eminences, and

looking at these alone one cannot wonder at the sufferings it caused.

At 11.30 P.M. on the evening of the operation the dressings were changed, being very wet: there had been no bleeding, and the wound was looking well. On the day after the operation the temperature at 1.30 P.M. was 100°, and 5 P.M., 103·4°. From this time it gradually subsided until February 22, when it was 97·2°. On the first five days after the operation the dressings had to be changed three times a day, and the drawsheet twice, on account of the profuse flow of urine through the wound. There was a little abdominal tenderness, limited to the right lumbar and iliac regions, and some pain when coughing was felt along the course of the ureter to the groin. A little bronchitis followed the operation, and continued up to the eighth day; when this was recovered from, the pain and tenderness also disappeared. On February 14, all three sutures were removed, the wound was looking well, and the drainage tube was firmly adherent to the surrounding tissues. Urine was passed per urethram voluntarily, and without difficulty. Up to this time a catheter had been used by my direction, but not from necessity.

On February 18, there was for the first time a purulent discharge from the wound, as well as the usual flow of urine. On this day the dressings and drawsheets required changing three times in the day, and the flow of urine continued profuse up to the 24th, but in the evening of that day (24th) the dressings were quite dry, excepting a little pus upon the protective oil silk. Onwards from this date to the day of her discharge from the hospital there was frequent variation in the daily amount of urine which escaped through the wound; on some occasions the dressings were quite dry, on others slightly wet, and on others again, and by far the most frequent, they were very wet.

On February 27, pus was for the first time found in the urine passed per urethram, but only in traces; and on the following day the temperature shot up to 100° (for the first time since it subsided after the operation), and the next day, February 29, to 100·8°. The wound was now nearly healed, except for a sinus large enough to admit the point of a pair of dressing forceps.

In the urine passed on the afternoon of February 29, and on March 1 and 3, there was a trace of blood as well as pus, probably from admixture with vaginal discharge; the wound

was being dressed with *Lotio rubra.* From March 2 to 5, there was severe headache with a hot dry skin, and a furred tongue, and the temperature varied from 100·8° to 103·6°. There was, too, some 'pinching' pain in the abdomen when she attempted to move, but none in the wound or in the loin. The catamenia ought to have appeared on or before March 2, but have not done so yet. There was nothing in her condition, in spite of the high temperature, which suggested anything serious.

March 9.—Whilst passing urine per urethram she was seized with great pain in the abdomen, and micturition ceased for a moment; this recurred to a slighter degree in the afternoon. The catamenia have not appeared yet. The discharge of urine through the lumbar sinus was very copious to-day.

March 10.—She was allowed to sit up, but she felt chilly and drowsy, and when the bed-rest was removed she fell asleep, and slept the whole afternoon and greater part of the evening. When she awoke she was hot and thirsty, and the temperature rose to 102·4°. The temperature continued high, but with considerable variations in each day, up to and including March 15. All this time, and indeed onwards to March 22, the dressings continued very wet. The catamenia did not appear.

March 21.—The sinus in the loin would only admit a large probe. The urine passed per urethram to-day, for the first time since February 27, is free from pus, a trace reappeared in the urine of March 24 and 25, but from this date to the day of discharge none was found in it. The source of the pus was the vagina. During the second week in April the escape of urine through the fistulous opening was considerable again; on April 12, the temperature varied from 100° to 103°, and the patient complained of shooting pains down the right side, for which fomentations were ordered. On asking her to cough, directly she had ceased to do so a narrow stream of urine was projected a foot and a half from the sinus. Another jet was produced by pressing over the front of the right kidney. She had been getting up daily since March 21, at first spending a good part of the time in an arm-chair, but of late walking about the ward a little.

On April 21, an instrument which had been made by Mr. Hawksley, to catch the urine, was worn for the first time. It answered very well, so that the quantity of urine escaping

by the lumbar fistula could now be accurately estimated. During the first three days it was worn the quantity so escaping varied from three ounces to fourteen ounces in the twenty-four hours; after the first few days the instrument was found inconvenient in the recumbent position, and by its pressure was causing some œdema about the sinus; it was therefore only kept on during the daytime. Between March 25 and April 30, when she was discharged, there was a frequent and curious variation in the temperature, which was nearly always above normal, often above 101°, and occasionally above 102°. Her catamenia did not appear until after her discharge from the hospital.

Within a few days after leaving the hospital, there was so much improvement that between May 4 and May 22, there was no escape at all of urine at the loin: on the 23rd and 24th about 1½ ozs. passed, but on May 25 none could be made to flow away even by firmly pressing upon the kidney, a proceeding which used to have that effect. A small quantity of pus hangs about the granulations of the sinus. She has had no pain since leaving the hospital.

October 20, 1880.—At the present time there is still a sinus about 1½ inches long; no urine, but a little pus daily escapes from it. The urine is acid and contains no blood; but a trace of pus due to leucorrhœa was for two or three days observed in the urine; the leucorrhœa having ceased, the pus has disappeared. She passes between 1½ and 2 pints of urine daily, her catamenia are regular, and her skin has greatly improved in texture.

May, 1881.—There is still a small sinus which discharges a little pus; she is in excellent health, and engaged in domestic service.

Remarks.—The case proves the possibility of extracting a calculus from an undilated kidney without more risk than is amply warranted by the sufferings and general disability which the operation is designed to remove. But before the success of one case is allowed to influence the course of treatment adopted in others, certain questions ought to be considered. First, can the diagnosis be made with sufficient certainty, both as to the nature of the disease from which the patient suffers, and as to which organ is affected? Secondly, what are the prospects that if a stone be detected it will be possible to complete the operation by removing it? Thirdly, what are the dangers of the operation? And fourthly, what is the best result which can be hoped for if

the operation is successful. As regards the first question, two opposite sets of cases will be quoted against the possibility of always arriving at an accurate diagnosis: on the one hand there are the cases of Gunn of Chicago, Durham, Annandale, Lente, and Barbour, in which no stone was found after exposing the kidney; and on the other hand the case of Simon in which 18 or 20 small calculi were found in the pelvis of a kidney, after it had been removed from the body, although Simon could not detect any stone by palpation of the exposed organ before removing it. Simon too was of opinion that in Gunn's case, judging from the description of it, the kidney may have contained small stones. Such a doubt however might in future cases be cleared up by the method proposed by Simon himself, of acupuncture after exposure of the kidney. There could be but little, if any, additional danger in making one or more pricks with a very fine needle into the kidney—no more than in pricking the lung or liver in the same way. The six cases * referred to in which no stone could be detected after cutting down upon the kidney, as well as the experience of surgeons of colotomy wounds, prove how readily patients recover from a lumbar incision, and even point to this procedure as a justifiable means of diagnosis in doubtful cases which are thought severe enough to be submitted to operation. Moreover there are many cases in which from the history of the illness and the symptoms, other causes than stone—such as neuralgia of the kidney, paroxysmal hæmatinuria, new growths, &c.—can be confidently excluded. (2) But there arises the second question as to the possibility of removing the stone if found. It is impossible to say that in all cases this could be done; but the chance of failure in completing it should not deter the surgeon from this operation when symptoms point to it as the only means of relief, any more than the fact that it has not been possible to complete ovariotomy in every case in which it has been attempted, or that the operation has been sometimes undertaken and the tumour found not to be ovarian, militates against ovariotomy.

It is not suggested that the operation should be thought of in mild cases of renal calculus, in which there is a fair prospect of the stone passing along the ureter, and in which therefore from its small size it might very likely not be detected; but it is recommended as a proper proceeding in

* As well as the case quoted by Mr. Golding-Bird, in the discussion on the paper.

those obstinate cases in which the colic and hæmaturia are severe and frequent, without waiting for the operation to be facilitated by the disorganisation of the kidney and its distension into a large abscess cyst. In those cases it may be reasonably hoped that the stones are of but moderate dimensions, and not huge, branched, angular bodies, such as are met with, after years of growth, in the sacculated pelves of suppurating kidneys. (3) As to the dangers of the operation: these have been considered to be hæmorrhage, extravasation of urine, and the febrile or other constitutional disturbance set up by a wound of the kidney. The two latter might fairly be put aside, as dangers too remote or insufficient to be set off against the advantages of the operation. In the above case, though there were some remarkable variations of temperature and some inexplicable pains during convalescence, there was never any sign of peritonitis, or of general inflammation of the wounded kidney, and never once any cause for anxiety, or any doubts as to the favourable progress towards recovery.

As to the hæmorrhage there would seem to be much less cause for alarm than has been hitherto supposed; cases in which the kidney has been accidentally wounded, as well as Lente's, Barbour's and my own case, prove this. The comparatively small amount of bleeding which has followed incisions of the liver tissue, in opening abscesses and hydatid cysts within that organ, also support the view that the kidney may be incised freely without bleeding to any serious extent. I have made incisions into the liver, in cases of hydatid disease, more considerable in depth than the whole antero-posterior thickness of the kidney, and no great amount of hæmorrhage has followed. The arrangement of the vessels in the substance of such organs as the liver and kidneys, the elasticity and compressibility of these viscera, and the quality of the pressure to which they are normally submitted, may explain the absence of severe hæmorrhage when they are incised. Possibly too, there may be something in the peculiar conditions of the circulation in the kidney which prevents prolonged hæmorrhage after a wound of its very vascular substance.

Further, it ought not to be overlooked that the kidney, in the event of hæmorrhage being severe, might be compressed by plugging the wound without doing any injury to the peritoneum. But indeed whatever danger there is from hæmorrhage, would seem to be from injury to the vessels of

the hilus, not from those in the secreting structure; and when it is borne in mind that the great vessels are situated chiefly in the fore part of the hilus, and therefore in front of the pelvis, and that consequently a calculus, if in the pelvis, would be probably between the vessels and the surgeon's knife, it is quite intelligible how, with ordinary care, an incision can be made through the back of the kidney-substance, and a stone in any part of the pelvis reached, without at all exposing these vessels to the risk of injury.

Finally, as to the best result which can be obtained by the operation. I see no insuperable obstacle to the complete and permanent closure of the sinus. Such a result is known to have followed injury to the kidney, in cases where for some time there has been a free escape of urine from the wound. But even if a permanent fistula, discharging daily a drachm or two of pus should remain, surely it would be a welcome substitute for the continued and agonising suffering excited by the calculus; it is not at all worse than a seton or an issue; and not nearly so hard to bear as a chronic ulcer or a fistula in ano or in perinæo; nor is it attended with the inconvenience and disgust of an artificial anus.

For these reasons I quite agree with Charles Bernard, the author of the account of Marchetti's operation, who thought that the writers on the subject of cutting into the kidney for renal calculi 'ought not to have so magisterially exploded the operation;' and I trust that the arguments in favour of Nephro-lithotomy will be increased by future experience and success.

VIII.—*Stretching of the Facial Nerve for the relief of Spasm of the Facial Muscles.* By W. Allen Sturge, M.D., and Rickman J. Godlee, M.S. *Read November* 12, 1880.

STRETCHING the facial nerve for the relief of 'tic spasmodique' is an operation that has been but seldom performed. The condition itself is so distressing, and the relief afforded by the operation is, for a time, if not permanently, so complete that we have thought it right to bring the notes of the following case before the society.

Our patient was a lady, æt. seventy-two, who consulted

Dr. Sturge at the recommendation of Mrs. Garrett Anderson. She came from a very long-lived family in which but little tendency to nervous disease had manifested itself. Her mother and her sister, however, appear to have possessed a nervous temperament, the latter having a distinct attack of depression and over anxiety about trifling things. Mrs. ——, had not been very strong as a girl, but enjoyed excellent health during the middle period of her life. She had been married, but had had no children, and lost her husband six years ago. This event caused her a considerable shock, and though she struggled against it, her health gave way and she suffered from great depression, with a feeling of powerlessness and a sense of difficulty in doing anything. This condition has very much passed off, but a very little will bring it on again, and when it recurs her memory, even for familiar things, becomes very imperfect. About the time of the onset of this fit of depression, twitching commenced round the right eye, and afterwards extended to all the muscles of the face. She has been under the care of eminent London physicians, who have administered amongst other things arsenic and opium, but without producing any effect on the disease. A long stay in the country once almost led to an arrest of the twitching, but it again recurred, and for the last two months (before July) it had been getting rapidly worse. During this latter period she had been staying in London or the neighbourhood, but had not been subject to worry or anxiety. The twitching was worse immediately after meals, but about half an hour later it diminished considerably. Fatigue increased it. She complained of no pain except the discomfort resulting from the twitching, nor were we able to detect any tenderness on the superficial branches of the fifth nerve. The spasms prevented Mrs. —— from sleeping, but we have no evidence as to whether it continued during sleep.

The condition of things being almost unbearable, the patient was eager to submit to any line of treatment that gave the least hope of relief, and was quite prepared to exchange her spasms for a palsy.

On July 20, she was placed under the influence of chloroform, and it was noticed that the anæsthetic did not arrest the twitching. The nerve was then cut down upon by Mr. Godlee in the following way, adopting the method that was first described by Baum: an incision was begun behind the ear, about opposite the meatus, and was carried

downwards and forwards to a point immediately below the lobule, and then it was prolonged almost perpendicularly, but slanting a little forward, nearly to the angle of the jaw. A small transverse incision was also made below the pinna. After exposing the edge of the sterno-mastoid and the parotid gland, these structures were separated deeply and were pulled respectively backwards and forwards. As soon as the edge of the digastric appeared, the knife was discarded, and the structures immediately above and parallel to the upper border of the muscle were one after the other pulled up with a blunt hook or forceps and cleaned with a steel director. When the nerve was reached and raised on the hook, the twitching at first increased, a somewhat firmer pull arrested it for a time, but it began again on relaxing the tension, a still firmer pull not only stopped the twitching, but caused the right side of the face to pass into a state of complete paralysis. After this had occurred one or two further pulls were given and then the wound was closed. It may be here stated that the operation was conducted antiseptically, and that healing took place without any suppuration and was complete on about the ninth day.

It may be well to add a few remarks on the subject of the operation. A large number of experiments had been made previously on the dead body, and it was found that while, in children and thin subjects, its performance was easy, in stout muscular people it became decidedly difficult. The amount of tension which the nerve would bear differed also very much; in some cases it resisted for an appreciable time the strongest pull one could exert, in others it snapped across with the greatest readiness. The line for the nerve is exactly parallel with the upper edge of the digastric, and it will be found about half down that part of the mastoid process which is exposed in the wound, viz. the free anterior border. The great auricular nerve will be in part divided. The posterior auricular vein very often occupies a position which would involve its division in the first incision. No normal artery of importance is likely to be met with in the deep parts of the wound, though considerable hæmorrhage may arise from glandular branches. The posterior auricular artery may be divided in cleaning the structures below the ear, but can give no trouble. In fact as long as the operator keeps in the same plane as the digastric muscle he can scarcely wound any vessel of importance. It must not be forgotten that the deep parts of the wound are in very close

proximity to the internal jugular vein. The trickling of blood into the wound makes the operation much more difficult on the living than on the dead subject, and it is not advisable to undertake it without a good light and two pairs of hands to assist, one to hold the parts aside and the other to sponge.

The sequel of the case is shortly told. On the following day there was a good deal of pain, which was compared to toothache, all over the right side of the face, and in the ear. This pain seems to have been present in all the recorded cases, and in all, as in the present instance, lasted some weeks. She was seen occasionally up to August 19, when the paralysis of the face was still complete. A good deal of trouble was caused by the gaping of the eye and the consequent conjunctivitis, which was relieved by the application of mildly astringent collyria, and holding up the lower lid with plaster, but beyond this there was nothing to record.

On October 19, we saw her together and made the following note:—Patient looks much better, stouter in the face, sleeps better, and says she has forgotten about the twitching; improvement began a month ago and has gone on rapidly. Shortly before it began there was pain and tenderness on the side of the nose; now a similar condition is complained of on the supraorbital notch. The pain in the ear has quite gone, but lasted till a week ago. There are occasional neuralgic pains in different parts of the head. The forehead at rest looks equal on the two sides; there is no dropping of the eyebrow, perhaps the furrows are rather deeper on the left side. There is still considerable deficiency of movement both in elevating the eyebrow and in frowning. The eye can be closed completely, but less forcibly than the left. In winking, the right eyelid acts very little, the lower lid still drops a little and the patient complains of some epiphera. The muscles about the mouth have undergone a certain amount of postparalytic contraction leading to almost complete symmetry of the face at rest; there is however still marked deficiency of movement about the mouth, but in none of the muscles is movement absent.

Once during the examination after the patient had been laughing, there was a distinct slight twitching of the muscles at the side of the mouth, consisting of three or four little twitches rapidly following one another. The patient herself has noticed absolutely nothing of the kind, and of course we did not draw her attention to the occurrence. We

shall hope before this paper appears in print to add a postscript giving an account of her condition some months later.

In conclusion it may be mentioned that four cases only of the performance of this operation appear to have been placed on record. A reference to them will be found in an article by James J. Putnam, M.D., in the *Boston Medical and Surgical Journal* for August 26, 1880. The first was by Baum, who after exposing the nerve seized it with a pair of forceps, and not only pulled it in both directions but squeezed it forcibly as well; in his case the paralysis began to diminish in the second week, but did not completely disappear until several weeks later. A second was by Schüssler who used a hook, as has been done apparently by all subsequent operators. The third case is by Eulenberg, and the fourth by the author Dr. Putnam. Dr. Putnam's case did not show any signs of recovery from the paralysis for two months, and Eulenberg's not for four months, a fact of great importance and interest. In none of the cases had the spasms returned at the time of making the report.

Remarks by Dr. Sturge.—The question of nerve stretching for spasmodic muscular conditions has now been before the profession for some time. Two or three years ago Mr. Barwell stretched the nerves of the brachial plexus in a case of muscular spasm of the arm. In this case no good result followed the operation. In another case of spasmodic action of the arm Mr. Lister stretched the cords of the brachial plexus, and in this case also the result was negative.

On the other hand every one of the five cases of spasm of the facial muscles, that have hitherto been treated by stretching the facial nerve has been, at any rate for the time, cured. I think that these facts may help us in obtaining some clue as to the rationale of the treatment, and as to the class of cases in which the operation of nerve stretching is liable to prove efficacious.

The case of muscular spasm of the arm which was operated upon by Mr. Barwell, was characterised by spasm in muscles, supplied by many nerves. The spasm was not constant, but was only brought on in connection with certain co-ordinated movements. Certain other movements could be performed without the production of spasm of any kind, and there was likewise no spasm when the arm was at rest.

The case of spasm of the arm upon which Mr. Lister operated was primarily one of extremely severe clonic torti-

collis. Having begun as usual in the muscles concerned in rotating the head upon the neck, it subsequently involved the right arm, the muscles of the back, and other groups of muscles. It was, in fact, a case of wide-spread spasm, involving muscles supplied by many nerves and having a tendency to increase both in area and degree.

In the case of facial tic, on the other hand, the spasm is confined to the muscles supplied by one nerve only; every muscle supplied by this nerve is affected, as a rule, in about an equal degree. The spasm takes place without any reference to movements or other actions on the part of the patient; the spasmodic action being an unmeaning contraction of the facial muscles strictly analogous to that which would be produced by a faradic current passed through the facial nerve.

In considering the positions in which a lesion, whether a so-called functional or a so-called organic lesion, may conceivably be placed to produce a symptom of this kind, we must mention the following:—

(1.) The muscles themselves.

(2.) The nerve trunk.

(3.) The centre from which the nerve takes its immediate origin, *e.g.*, in the case of the facial nerve, the facial nucleus in the medulla oblongata.

(4.) Cortical centres for governing the movements of individual facial muscles.

(5.) Coordinating centres for various movements in which the face is implicated, presumably situated in the grey matter of the pons Varolii, crura cerebri, or great ganglia at the base of the brain.

That the symptoms are due to a primary muscular lesion may, I think, be denied on account of the way in which the spasm is confined to the distribution of a certain nerve. Neither is it easy to imagine any morbid state of the trunk of the facial nerve which should be capable of keeping up an almost constant clonic spasm for so long a time. Movement cannot originate in nerve fibre alone, the function of the fibre being to conduct impulses originated elsewhere, but not to originate them itself.

We are thus reduced to the consideration of lesions seated somewhere in the grey centres connected with movements of the facial muscles. With a view to aiding this consideration I will examine briefly the various forms of movement of which the face is capable.

(1.) There is the movement of a single muscle under the direct influence of the will. Certain persons possess the power of moving individual muscles of the face in a high degree; others have the power only slightly developed.

(2.) There is the movement of groups of muscles to produce coordinated action, each muscle being contracted to the extent only that is necessary for the harmonious association upon which the success of the action depends. This form of movement is seen in the semi-automatic facial movement of every-day life.

(3.) There is the gross incoordinate action in which all the muscles supplied by the facial nerve take part together, no muscle being more active than another. This is the type of movement seen in the form of facial tic of which our patient offers an example.

There are two sets of nerve centres connected with the facial nerve, about which we are justified in speaking positively. These are:—

(1.) The small nucleus in the medulla oblongata, from which the facial nerve takes its immediate origin and with which the whole, or nearly the whole, of the facial nerve is connected. A lesion involving this nucleus might be expected to produce effects upon the face, the distribution of which would be the same as those arising from a lesion of the nerve; destruction of the nucleus would be followed by total paralysis of that side of the face which it supplied; irritation of the nucleus would result in spasm of all the muscles under its influence—a spasm affecting the muscles in about equal degree with no attempt at coordinated distinction between them.

(2.) The other set of centres are those in the cortex of the brain, situated according to Ferrier over a wide area consisting of the lower part of the ascending frontal, the back part of the third frontal, and the lower part of the ascending parietal convolution. Here, the fibres passing up from the facial muscles have spread themselves out widely, and experiment proves that the cells with which these fibres are connected are intimately associated with governing movements other than those of the face. The nerve centres governing the facial muscles have ceased in the higher regions to be collected into one compact group; and any lesion involving these widely scattered centres in such a manner as to affect all the facial muscles would be sure to affect also functions other than those of the face.

The question arises whether there may not be centres connected with the face between these two extremes situated in the grey matter of the pons Varolii, crura cerebri, lenticular nucleus, caudate nucleus, or elsewhere.

Ferrier says, speaking of the corpora striata, 'They form, as it were, the centres of automatic, or subvoluntary integration of the various motor centres differentiated in the hemispheres.' This statement probably applies with equal truth to the masses of grey matter in the crura cerebri and the pons. The functions of these various centres have not been fully made out; but they will probably be ultimately found to be connected with coordinations more or less elaborate, involving muscles supplied by totally different nerves, such coordinations for instance as those involved in sipping, drinking, mastication, deglutition, &c. If this be so, an irritative lesion of these centres would give rise to spasms affecting coordinated movements allied to chorea, rather than to the kind of spasm seen in facial tic.

It will, I think, be evident from these considerations, that facial tic probably depends upon a lesion of the nucleus of the facial nerve in the medulla oblongata.

Now, the rationale of nerve stretching must be sought for in the profound shock produced on the nervous system by the operation, and this shock may be supposed to act on:—

(1.) The nerve fibres themselves.

(2.) The centre from which the fibres take their immediate origin.

(3.) The higher centres to which the nerve passes after leaving the centre just named; the effects of the shock ultimately making their way to the cortical centres themselves.

It is perfectly evident that the parts which will suffer most will be the fibres of the stretched nerve and the nerve cells from which they take their immediate origin. The cells in the higher centres will be less and less affected in proportion as they are farther and farther removed from the nerve trunk, the cortical being affected least of all.

From this it would follow that those varieties of spasm which depend upon a lesion of the lowest centres, as shown by the simplicity of the spasm and the complete absence of any attempt at coordinated movement, are more likely to be influenced by nerve stretching than those which, by their complexity and coordination, point to a lesion of one of the higher centres.

I think therefore that in examining cases of spasmodic action of muscles, with a view to treating them by nerve stretching, it will probably be found of the utmost importance, so far as prognosis is concerned, to examine carefully whether the spasm is confined to simple incoordinated contraction of the muscles supplied by one or more nerves, or whether it be a complex coordinated action allied to those seen in chorea, athetosis, or the condition termed hemi-kinesis.

With a view to clearing up this point, I think it very important that all cases where nerve stretching has been employed without success should be reported, and that in all such cases an accurate description of the kind of movement present should be given, that we may be able to judge of the relative action of nerve stretching on the various forms of spasm.

Report on the further progress of the case.—May 27, 1881.—Since October last, when our paper was read, the success of the operation has been for the most part maintained. When last seen, about a week ago, the face was quite free from twitching, and the action of the muscles in ordinary movements of the face was almost equal on the two sides. Within the last month, however, there has been an occasional slight twitching of the right side. The first return of spasmodic action was clearly traceable to a depressed state of general health, associated with supraorbital neuralgia. The patient was advised to keep perfectly quiet in a darkened room; a blister was applied over the right supraorbital nerve, and three grains of quinine three times a day were prescribed. Under this treatment the patient lost her neuralgia, and with it disappeared the slight twitching that had been present. A second return of twitching, still very slight, has since occurred, and in this case also it was dependent upon a depressed state of general health, due to the fact that the patient had been subjected to severe mental strain, attended with anxiety.

The patient finds that a cold wind makes the right side of her face feel stiff, as though the muscles were contracted. This is especially noticeable in the eyelids when the eye is exposed to cold. This partial contraction under the influence of cold is avoided by wearing large protecting spectacles.

Mention was made in our first communication, of a patient who had suffered from twitching on both sides of the face, and on whom Mr. Godlee had a few days previously

stretched the left facial nerve. This patient was subsequently shown to the society about thirteen weeks after the operation, when the paralysis induced by the stretching had just begun to disappear. It was hoped that an account of his case might be added to this communication, but as it does not yet seem ripe for publication it is proposed to defer it till next session. It may, however, be here stated that his right facial has since that time been stretched, and that the right side of the face remains paralysed, while the left side has regained its power completely. It cannot be said, however, that he remains altogether free from twitching; there is an occasional slight spasmodic action about the orbicularis palpebrarum, and he finds it difficult to open the eye if he closes it when exposed to a cold wind.

IX.—*Two Cases of Myxœdema.* By Dyce Duckworth, M.D. *Read November* 12, 1880.

About twelve months ago I communicated to the society the particulars of a well-marked case of this peculiar malady. The subject of it has unfortunately passed from my care, has left her former residence, and can no longer be traced.

In the course of the last two months, two more cases have come before me, and the details of these I now proceed to place before the society. Both patients are present this evening for examination.

The first case is that of Eliza Morris, æt. 47. She came amongst my out-patients at St. Bartholomew's Hospital, and having made my diagnosis of her condition, I admitted her to Hope Ward under my care.

August 19, 1880.—Patient is, and always has been, a stout woman. Her height is 5 feet 4 inches, and she weighs 13 st. 2 lbs. She was born, and lived in, Birmingham until 25 years ago, when she was married and came to reside in London. She has had nine children, and at intervals had several miscarriages. There is, however, no reason to suspect any syphilitic taint in connection with these.

Her complexion is fair, and there is abundance of wavy light red hair. The skin of the face is pallid and waxy-looking, with the exception of a persistently red patch over

in the axilla. The visceral organs were natural, but the uterus was found to be displaced backwards, and to the right side, although moveable. She improved in four months under the use of quinine and iodide of potassium, with galvanism. Complaints were made at that time of numbness and weakness, and albumen seems to have been sought for in the urine, but was not found. She was subsequently in the London Hospital with what she describes as total loss of movement and sensation in both legs, and for some time her urine was removed by the catheter.

Her mother died at the age of 62 of heart disease, and her father died after rupture of some blood-vessel. She has lived unhappily at home, and suffered from ill-usage both at the hands and feet of her husband.

During her stay in hospital, she suffered from dyspepsia and retching for a short time. The bowels were generally constipated. On most days she felt cold, and was indisposed to do anything. Her speech and manner varied from time to time; some days she appeared more dull and hebete, and her face seemed more puffed than on others. There was usually a pain felt in the lower part of the abdomen, and in the right side. The pulse varied from 48 to 84. An offensive taste and smell were often complained of, though no particular fœtor was noticeable to an observer. On one occasion she found a needle sticking in her side, two-thirds of its length having penetrated, without her being aware of it. Stimulants very readily affected her, and made her stupid. She has taken liquor arsenicalis in bitter infusion, and as much supporting diet as possible. She has had exercise in the square on fine days. On the whole she feels a little more comfortable since admission, but there has been no manifest change appreciable. Dr. Ord kindly came to see this patient, and considered it a most typical example of this peculiar malady.

Her own account of her paralytic attacks is that they were caused by severe kicks about the buttocks and legs from her husband. It seems probable that some early symptoms of the present ailment began about eight years ago. Certain points in the history of the case suggest a possible syphilitic taint, but on the whole the evidence is not sufficient to support this view, and if it was, it would have no recognised ætiological significance for the onset of myxœdema.

The amount of ordinary œdema appeared to vary, both

in the face and legs, from time to time. Sometimes the dependent side of the face in bed was found much more puffed than the other. The defective heat-production which is met with in these cases is a very noteworthy symptom, and is perhaps one, amongst others, which points to the malady as owning some tropho-neurotic origin.

The second case is that of Mary Shepherd, married, æt. 46, who came under my care in September 1880. She is a well-grown woman, 5 feet 3 inches in height, with dark hair, brownish-green eyes, complexion dirty-sallow colour, with circumscribed patch of redness over malar bones, and puffy about the eyelids. Her general facial aspect suggests chronic nephritis. The face swells at times more than others. There is no œdema of the conjunctivæ. She has one mole on the left cheek. The alæ nasi are not flattened. The tongue and fauces appear natural. Her teeth are much decayed. Her expression is dull and languid. The thyroid body can be felt, and is of natural size. The hands are expressionless, and the skin is harsh on the backs. There is apparently a little more fat in the supra-clavicular fossæ than natural. The thoracic organs are normal, but there is slight bronchial catarrh. Pulse 80 standing. The abdomen is full, bowels flatulent and rather constipated. The legs are œdematous, the right pitting on pressure more than the left. The urine is of specific gravity 1005, acid, and contains no albumen. Catamenia irregular during this year.

The history is that she noticed herself becoming stouter eight years ago, and her friends thought she was failing in health. Two or three years ago, she found that she could not work at her business, as a milliner, so rapidly as formerly. Her speech was observed to be slower, and her general movements likewise. She speaks in a drawling manner, but does not snuffle with the articulation. She moves slowly and deliberately, and takes much longer to do everything than formerly. She can pick up a pin readily, and although her hands appear somewhat puffy and 'spade-like,' a ring, which she has long worn, moves easily over her finger. She can walk fairly well, if not hurried, and lately accomplished two or three miles. But she is very nervous in the streets, and has sometimes fallen down. She sustains her balance with more difficulty than formerly. She is very slow in dressing herself. She feels chilly, and is sensitive to change of weather. The hands are cold. The temperature in the right axilla is 97·4°, in the left 97·2°. Her eye-

sight is less good than formerly. She complains that her food does not taste properly.

Till eight years ago, she enjoyed good health. She has lived in London for twenty years, but is a native of Retford. Her father died when she was young; her mother is 73 years of age, still living. She has one brother and two sisters, who are quite healthy. She has had one child who died of small-pox when but six months old.

Her urine was again examined and found to be of specific gravity 1010, void of albumen and glucose.

X.—*A Case of Myxœdema.* By W. B. Hadden, M.D.

I. L., æt. 37, a widow, was admitted into St. Thomas's Hospital under the care of Dr. Ord on October 22, 1880. The only important points in the family history are that her mother and one brother died of phthisis, one sister is phthisical, and that two step-sisters have dropsy. The patient had an attack of acute rheumatism thirteen years ago. She suffered subsequently from shooting pains in the joints, especially in the right elbow and wrist, which were said to have been fixed in one position for nine months. About the same time the hand used to swell occasionally, with pitting on pressure. She suffered also from pains in the bones of the leg and ankle-joints, which became swollen. She then began to fall when walking, and lost confidence in herself in the streets. 'I could always walk across a room, but when out of doors I feel as if there was too much space and am in constant fear of falling. If I met a child I should stop, as the slightest touch would knock me over; a stone on the path would make me stumble if I trod on it.'

The patient states that her skin readily becomes bruised, and that wounds heal exceedingly slowly and are accompanied with much swelling.

During the last six months she has been losing her hair, which breaks off short. The eyelids swell very much at times; the sight has not been much affected, but sometimes she fancies that there is something crawling along the floor. The face has remarkably increased in size; the voice has become gruffer, and the speech slower. A year ago deafness of the right ear came on. The memory has remained good, but there has been some confusion of thought and irritability

of temper. The throat swells at times, and there has been great difficulty in breathing during the last five years. Occasionally for the last eighteen months she has suffered from a curious choking sensation. Patient says she is never hungry. The extremities are always cold, and even in summer she never feels too warm. She never perspires. When she is seated, the limbs frequently become numbed 'all of a sudden,' and for a time she is quite helpless. The catamenia first appeared when she was eighteen, have always been irregular, but for the last four months entirely absent. On examination, the case was found to be a typical example of myxœdema. The face is uniformly swollen and puffy, but there is no pitting on pressure. The lips and alæ nasi are much thickened. The eyelids appear to be œdematous, but do not yield to the finger; on each cheek there is a circumscribed flush, which contrasts strongly with the white porcelainous area beneath the lower eyelid. There is considerable fulness beneath the chin. The skin is everywhere rough and dry; on the face it is also shiny. Above the clavicle there is much swelling. The upper part of the legs and thighs and also the arms and forearms are affected with solid œdema, but the hands and feet are comparatively free. The right ankle is much swollen, and there is great thickening of the corresponding fibula and tibia, due without doubt to a fracture which the patient sustained twelve months before. The skin covering these parts pits slightly on pressure.

The skin and subcutaneous tissues over the chest and abdomen are swollen and firm. The lungs are fairly normal, the respiration being a little harsh. The heart sounds are feeble and the first sound at the apex is reduplicated, but there is apparently no hypertrophy. The pulse is full and regular, about 84. The liver dulness is normal; the spleen is somewhat enlarged. The urine is 1020 and contains no albumen. The speech is slow and drawling. Occasionally the words are clipped, as though there were some impediment at the back of the throat. Patient sweats little, if at all. The movements of arms and legs are very slow. She says that it takes much longer to dress than formerly. The thyroid gland is much diminished in size. The tongue is large and thick, red at the tip and edges, furred in the centre. The appetite is fairly good. The nails are stunted and brittle. The quantity of urine varied from 70 oz. to 34 oz. in the twenty-four hours, the average being about

50 oz. The specific gravity ranged from 1010 to 1020, with a mean of 1013. The daily quantity of urea in the urine, when the patient was placed on a nitrogenous diet, varied from 305·4 to 95·6 grains. The average was 184·3 grains. The temperature remained persistently below the normal. Once only it was 98·8°, but with this exception it never exceeded 97·8°. The average was about 1° lower; the lowest temperature was 93°. The patient was discharged in the same condition as on admission, on November 28, 1880.

It is noteworthy that along with the subnormal temperature there was a remarkable diminution in the quantity of urea excreted by the urine. It is true that a variety of interstitial nephritis occurs in the later stages of myxœdema, but the diminution in the quantity of urea cannot be referred to renal disease, of which there were no clinical indications, with the exception of slight increase in the quantity of urine and of a reduplicated first sound at the apex. There was, however, no albumen in the urine, and no hypertrophy of the left ventricle.

The low temperature, to which we have called attention, points to diminished tissue waste. In other words, we believe that there is no retention of urea in the blood, but rather a non-formation of this product in the system; the absence of symptoms of uræmic poisoning is readily explained on this hypothesis.

It may be that the *ultima causa* of myxœdema is to be found in the sympathetic nervous system, which is now known to exercise, through the action of its vaso-motor filaments on the blood vessels, great influence over the nutritive processes. Experiment has shown that division of the cervical sympathetic on one side, leads to dilatation of vessels, increased temperature, and marked redness on the corresponding side of the head. Electrical stimulation of the cut end of the sympathetic which remains in connection with the vessels, produces the opposite condition. There is then diminished temperature, pallor, and lessened tissue waste; it is conceivable that an analogous condition of the vaso-motor system may be present universally in myxœdema. On this supposition it is evident that diminished body-waste would ensue.

There would also result retardation of all intellectual and bodily operations, since every act and every thought is now known to be dependent on chemical and heat-producing

changes of the tissues. It would perhaps be inadvisable to push this explanation too far. But when we consider that the lymphatic system would doubtless, like the blood vascular system, be also involved in accordance with this hypothesis, the myxœdematous state of the connective tissue of the skin and organs is fairly explicable. Elephantiasis affecting the legs and scrotum has been shown to be due, in all probability, to lymphatic obstruction.

Once more, is it not possible that the solid-œdematous condition of the skin, subcutaneous tissue, and connective tissue of organs in myxœdema, may be related to an inability as it were on the part of the lymphatics to remove waste-products?

In exophthalmic goître the enlargement of the thyroid gland is probably dependent on a paralytic state of the cervical sympathetic. Our hypothesis again, when applied to myxœdema, suggests that the diminution in the thyroid may be related to an opposite condition affecting its vasomotor filaments.

XI.—*A Case of Myxœdema.* By Felix Semon, M.D.

THE patient, whose case forms the subject of the following communication, was shown to the Clinical Society in illustration of the rare disease, from which she suffers, on Nov. 12, 1880, when Dr. Dyce Duckworth read a paper on Myxœdema. The case is put on the records of the society in obedience to the wish of the then President, Dr. Greenhow. The history and present state are the following:—

Mrs. E. H., æt. 53, consulted me for a deficiency of articulation and occasional pains in her nose and throat at my Out-patients' Department on October 25, 1880. Her family history is good; both parents died from old age; one brother died from consumption at the age of 46; there is no hereditary taint in the family.

The patient, who gives her report with the slow, nasal voice characteristic of the affection, states that she herself had been a healthy child, had had the usual diseases of childhood (measles, scarlatina, whooping-cough), had menstruated first at the age of 14½ years, and since always regularly up to about six months ago. When 15 years old she had an 'inflammation of the chest,' about which she

cannot give any explicit details. She married at the age of 18, and has had fourteen living children and seven miscarriages. The first was a living child. There is absolutely no ground for suspecting constitutional syphilis in her case. The living children are all strong and healthy. There is no explanation at all for the miscarriages, which took place at very different periods of pregnancy. The children were born at very short intervals from each other. In consequence of this circumstance and of family troubles she began to suffer some seventeen or eighteen years ago from 'general weakness and nervousness.' The latter especially became so much developed at one time, that she could not remain in a room in which two or three persons were talking together. At this time she had also sensations of 'sparks' before her eyes, noises in the head, and feeling of 'pressure' on the vertex. This last named symptom quickly increased to an insupportable, almost continuous pain, aggravated sometimes by still more severe attacks, which finally became so violent that she could not help screaming. During these attacks her relations observed that her eyes almost 'bolted' from her head. When she crossed her hands on the top of her head and pressed there, the pressure, she states, relieved the pain, so that she finally acquired the habit of sleeping with her hands in that position. This state of things is said to have lasted *nearly ten years* with but little change, though the patient remarked herself, that her general state of nutrition suffered astonishingly little under it, and all functions remained in perfect order. About seven or eight years ago she went to St. Thomas's Hospital on account of her nervousness, which had still increased after two very bad miscarriages. At that time she was so nervous that she was afraid of travelling by rail, walking alone, crossing a street, &c. After two months' treatment in the Out-patients' Department under Dr. W. Ord, she greatly improved. (She does not know how her affection was called, and what remedies were given to her.)

During the next two years she was *much* better on the whole, though there were occasionally some headache and general weakness. Six and a half years ago she had her last child. The improvement continued until about one year after his birth, but from that time a gradual deterioration again set in, progressing up to the time when this history was taken down (Nov. 4, 1880).

The onset of the present illness (*i.e.* about five years ago) was again coincident with much worry, excitement, heavy

work and family troubles. The first symptom observed was again the fearful pain in the head described above; this time however it was and is, if possible, still more terrible, and no longer limited to the neighbourhood of the vertex, but extends from there to the occiput, neck, (the neighbourhood of the processus spinosi of the third and fourth cervical vertebræ is pointed to as especially painful), ears (deep-seated pain with sensation of 'roaring of waves' in both ears, especially in the right, less troublesome however now than some time ago), throat (she could only sleep with her mouth open, made a 'curious noise' whilst sleeping, and brought up a badly-smelling sanguino-purulent phlegm, which she thought came from the *upper* parts of the throat—describing as the seat the neighbourhood of the posterior nostrils,—though nothing of that phlegm was ever detected in her handkerchief after use), tongue (especially right half of its tip), and nose (especially right half of its tip, which is stated to become always red when the pain is violent). Shortly afterwards pain and weakness in the lower extremities up to the knees set in, so that the patient after two months could only walk with support. 'She often fell, always forward without any warning.' This symptom, however, has disappeared for about ten months. A little after the beginning of her present illness (*i.e.* five years ago) some other symptoms began to make their appearance. The patient had a return of her former nervousness, especially at bedtime. She was 'afraid that she would jump out of the window or do something formidable.' But still 'she tried her best to prevent herself thinking of it.' The sleep began, however, and has continued to be much disturbed; she goes to bed, sleeps two or three hours, has a fearful dream, awakes suddenly and cannot sleep any more.

For the last four years she has often had a feeling as if 'the weight of her head was too heavy for her body,' and as if the head must fall forward or to one side. 'Her memory had begun to suffer about four years ago, she is very irritable, and often calls things by the wrong name.' During the last two years her articulation has become impeded. She speaks much slower than formerly, and always with a particular effort. Sometimes (especially when she is excited) she cannot speak at all when she wishes to say something quickly. She is herself painfully aware that her voice is much more indistinct than it used to be.

From the beginning of her present illness she has

remarked, that her teeth in both jaws began to break without any particular pain. Once or twice she awoke in the night and felt a broken tooth in her mouth. The gums are often inflamed and bleed, and the swelling extends to the neighbouring parts, notably those situated underneath the chin. For the last two years her hair has come off *everywhere* on her body (head, eyebrows, eyelids, axillæ, pubes, etc.)

For the last four or five years she has suffered from a continuous sensation of cold over the whole of her body. There is a feeling of numbness in the fingers of the right hand, with the exception of the thumb, and also in the index finger of the left hand. The nails are generally, and the hands often 'purple' coloured. There has been no perspiration for many years, and the skin all over the body feels dry, parched, brittle, and peels off in scales.

About two and a half years ago her face, especially the parts just below the eyes and underneath the chin, began to swell, and the colour of the face changed to a yellowish-white or grey, whilst two vividly red spots often appear just beneath the eyes.

Appetite on the whole very bad; bowels generally confined; morning nausea, but no vomiting. No cough, no expectoration, no pains in chest. There has been some dysphagia for the last six or eight months; the food seems to be arrested at the level of the cricoid cartilage. For some years past the patient has occasionally had a taste of 'salt' or 'copper' on her tongue.

This completes her history.

Present state.—Middle-sized, well built woman in apparently good state of nutrition, with quiet, composed expression on her face. Colour of skin of face, unhealthy yellowish-white œdematous looking, without the sharply limited red spots on cheeks often observed in these cases. Pressure on the face, especially on the folds underneath the chin, which appear most œdematous, does not leave any impression. Lips and nails slightly cyanotic. Tip of nose and fingers cold, but not ears. Eyes particularly watery, and puffy. Mr. Nettleship, who was kind enough to examine her eyes, reports that they are normal, with the exception of slight hypermetropia and presbyopia.

Skin of the whole body dry, rough, brittle, scaly, especially the epidermis of the hands. There is no trace of a thyroid body to be felt.

(Suddenly during this examination, the patient has an

attack of hysterical sobbing, which passes away very quickly, but gives an opportunity of observing, that in *one* moment there appear the characteristic sharply limited red spots on the forehead and on the cheeks, whilst the nose, especially its tip, becomes dark red. A little brandy and water being given to the patient, a good deal of dysphagia becomes noticeable.)

Hair on head very thin; on eyebrows, eyelids, etc., almost entirely gone. Articulation slow; intonation slightly nasal; speech somewhat indistinct.

First sound of the heart over apex reduplicated; second over mitral *and* aortic valves a little accentuated. Some dilatation of right heart. Lungs healthy, as are the organs of the abdomen.

Uvula much elongated, œdematous looking. Soft palate, and pharynx very anæmic; gums anæmic, swollen. Teeth defective in number, and the remaining ones mostly decayed and loose.

Larynx pale and slightly œdematous looking, especially the interarytænoid fold, which appears quite transparent. No impairment of mobility, though during phonation the inner borders of the pale vocal cords remain at some distance from each other. Reflex irritability to touch of laryngeal probe not diminished.

Introduction of bougie No. 20 into œsophagus and stomach easy.

Temperature (repeatedly taken at long intervals) on the average 97·1; equal on both sides. Pulse about 62, no abnormal tension.

Urine (repeatedly examined) spec. grav. 1010–1014; slightly acid, contains much mucus, epithelial cells, a few red blood corpuscles, and a very small number of white; and occasionally the slightest trace of albumen.

In all other respects the case corresponds so entirely with the admirable description of my friend, Dr. W. Ord, (*Brit. Med. Journ.*, 1878, Vol. I., p. 671), that it is sufficient to refer to this.

Remarks.—I have considered it advisable to give so detailed a *history* of the case, and to dwell comparatively little upon the *symptoms*—which have scarcely at all changed during the seven months the patient has been under my observation—because the phenomena which the case presents are simply typical, and add but little to our knowledge of the symptomatology of this new and interesting disease, whilst on the other hand the history contributes as it seems to me

not unimportant hints towards the question of its *etiology*—a point which is certainly a *very* obscure one at the present.

It would be presumptuous for me to discuss the different ingenious hypotheses made as to the causes and the nature of myxœdema by Sir William Gull,* Dr. Ord,† Dr. Goodhart,‡ and Dr. Hadden.§

The present case, however, seems to be strongly in support of the views emitted by the two last named gentlemen, viz. that the original changes are to be found *in the higher nervous centres* and are of the nature of a 'degeneration pure and simple' (Hadden). It is impossible to overlook in the history above given the many points in favour of such a view. The organism of my patient had to undergo, within a comparatively short period, much too frequently the revolutionary changes of child-bearing, delivery, and nursing. Add to this family troubles, worry, the care of so large a family, etc., and it must be certainly admitted, that the 'degeneration pure and simple' is very likely in this case the consequence of 'utter exhaustion of the system.' Where the *primary* lesions existed, *i.e.* whether in the *cerebral* nervous system or in the *sympathetic* nerve, seems also to be indicated by the history. In the first period of the disease, which extended over nearly ten years, we find, that with symptoms distinctly pointing to anæmia of the brain (general weakness and nervousness, headaches, noises in the head, sparks before the eyes, etc.) yet 'the general state of nutrition suffered astonishingly little under it, and all functions remained in perfect order.' It even appears that a very distinct *improvement* set in, extending over two years, after treatment in St. Thomas's Hospital. Only *some time after* the beginning of the *second* period *nutritive* changes associated themselves to the cerebral symptoms, which had *first* returned, and looking to the vaso-motor derangements now present and described above (diminished height of the body-temperature; rapid flushing and paling; sensations of numbness in isolated parts of the upper extremities, etc.), I consider it by no means improbable, that in this second period of the disease not only *peripheral* nervous changes, but also a lesion of the *sympathetic* system, were superadded to the already existing cerebro-spinal impairment.

It seems to me permissible to draw these conclusions

* 'Transactions Clinical Society,' 1874. † *Loc. Cit.*
‡ *Medical Times and Gazette*, May 1880.
§ 'Progrès Medical,' November 30 and 31, 1880.

from the history of the very trustworthy patient who, although her memory has now suffered, must have been an unusually intelligent woman. (Her reports have been repeatedly corroborated by different relations of hers.) It would however, of course, be idle to attempt to localise more precisely the changes which have taken place, and which very probably concern great tracts, if not the entire connective tissue, of the central organs.

In conclusion, I have only to repeat, that the state of the patient has on the whole remained unchanged since she has attended under me. For some time large doses of iodide of potassium (30 grains three times daily) in an infus. cinchon. very materially improved her headache, which is her most troublesome symptom; but for some time past she has had a return of these pains, and still larger doses of iodide of potassium seem to take as little effect as any of the other nervine or tonic remedies.

XII.—*Erythema Gyratum Perstans in the two elder members of a family.* By T. Colcott Fox, M.B. *Read November* 12, 1880.

GEORGE W. T., æt. 19½ years, and his sister, æt. 18 years, are affected in a precisely similar manner, with an erythematous eruption of the skin, from which they have never been entirely free since its onset, in each case at about the age of three or four years only. They are the two elder children of a family of five, who are all alive and healthy. The family history is quite devoid of any facts throwing light on the case; there are two grandfathers living, aged respectively 78 and 76, and it is said that a great grandfather and his wife lived respectively to 100 and 101 years. The father of the patients is healthy, but has been stone deaf since his 14th year (it is supposed from bathing); the mother is suffering from a renal calculus. I cannot get any clue to a syphilitic history. There is nothing special to observe about the subjects of the eruption, excepting that their birth was preceded by one miscarriage, and that they are decidedly somewhat stunted physically, though not mentally, compared with the other members of the family. Both have numerous minute teleangiectases over their faces, the girl

always has a hoarse voice, and the boy erupted his teeth with difficulty, and when 10 months old had infantile paralysis of the left leg.

The *description of the eruption* in one case will serve for both, although the attacks are rather more severe and extensive in the brother. The eruption begins by the evolution of scattered, isolated, slightly raised, erythematous papules, about the size of a millet seed, accompanied by the most intolerable itching, which at its height destroys the sleep and much distresses the patient. These papules quickly extend centrifugally, whilst the central hyperæmia as rapidly subsides, so that in a few hours after the appearance of a papule we observe a circular area of skin pigmented but otherwise normal, ever enlarging in exact ratio with the narrow, slightly raised, advancing erythematous border. Such areas complete their desquamation so rapidly that there is only a ragged cuticular fringe adherent to the inner edge of the advancing erythematous border of the ring, but this white fringe constitutes a very curious and conspicuous feature. Now as these rings continue to enlarge, which they may do up to about the size of the palm of the hand, they meet other adjoining similar rings and fuse together, and so in time large tracts of skin are covered with festooned and gyrate figures. The skin over which the erythema has travelled resumes in a few days its normal condition, excepting as regards the pigmentation. Both patients are subject to recurrent non-febrile outbreaks of greater or less intensity, which occur at least every three months, and last from ten days to six weeks according to the severity, and then the greater part of the trunk, with the extremities, especially their extensor surfaces, may be attacked; but in the intervals also between these outbreaks there is a continuous evolution of papules here and there, particularly over the shoulders, the thighs and buttocks, and in the girl the popliteal space, so that I have never yet seen the skin absolutely free; and thus it has been, the patients inform me, ever since they were about four years of age. The palms and soles, the face, neck, and scalp are never attacked, and rarely the dorsal surfaces of the hands and feet. The patients associate the special outbreaks with changes in the season or in the weather, and they say the disease is always less intense in the winter. The male patient further notices that the eruption will start from the region of any scratch or cut, and experience teaches him

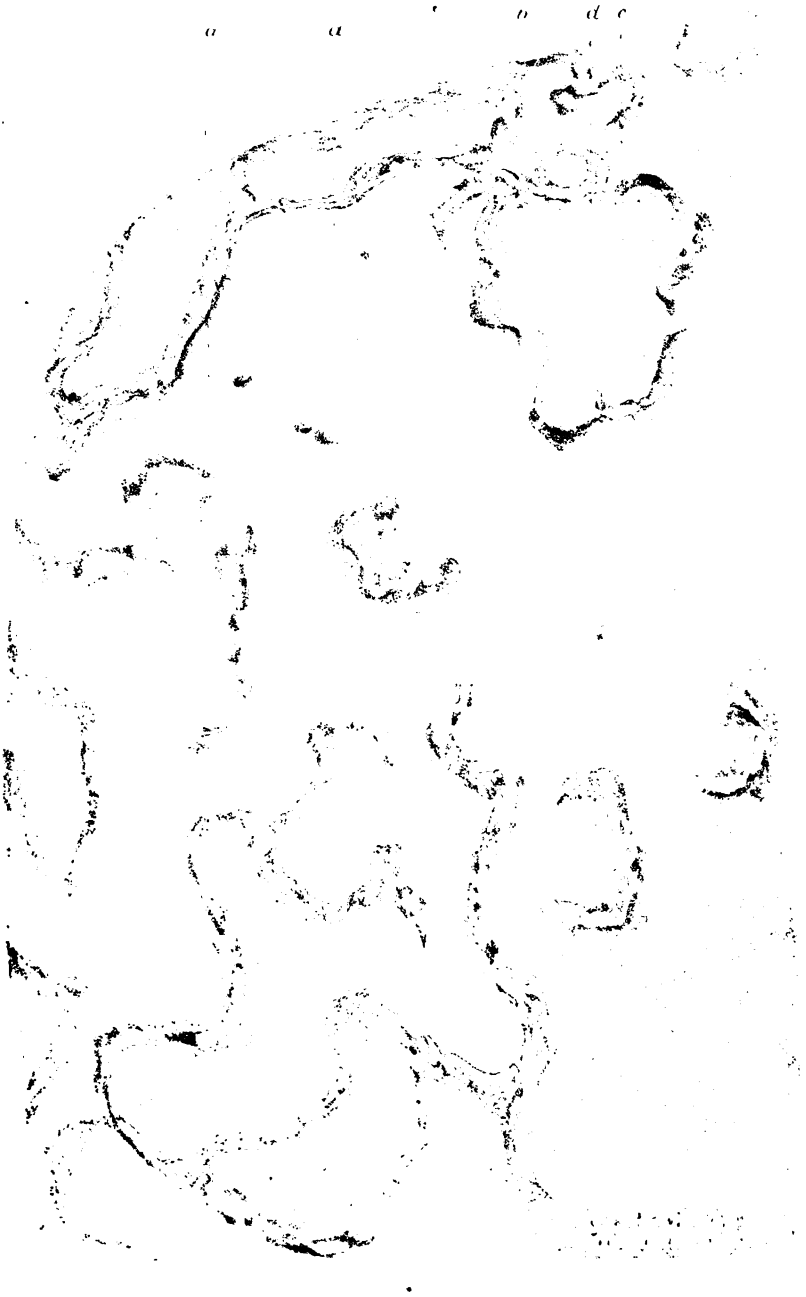
DESCRIPTION OF PLATE II., ILLUSTRATING DR. COLCOTT FOX'S CASE OF ERYTHEMA GYRATUM PERSTANS.

a.—Primary eruptive papules.

b.—Young circinate eruption formed from a papule.

c.—White, ragged, desquamating cuticle, attached by one border to the advancing erythematous circle, and free towards the centre of the patch

d.—Pigmented interior, which has already rapidly desquamated.



Mintern Bros. Chromo lith.

Plate to Flora Cantor. Erythronia Grandiflora Perrutans.

that an attack will quickly and certainly follow any irregularity of living.

Remarks.—I have brought this eruption under the notice of the Society, as I have been unable, after extensive search, to find in medical literature any reference to such a condition, and I was anxious to glean the opinion of others, for I find the male patient has been for several years an out-patient at various London hospitals.

As to the nature of the eruption I think there is little doubt it must be placed in the class of erythemata. The festoons and gyrate configurations assumed, are simply an accident, so to speak, of the centrifugal spread of the eruption, common to many skin affections, *e.g.* many syphilides, erythemata, widespread ringworms, chronic psoriasis, and leprosy. The primary papules, though small, are essentially erythematous in type, and the fugitive character of the erythema and acute spread of each individual eruption give support to this theory. As to syphilis there is absolutely no clue, unless the miscarriage preceding the birth of these two children excites a suspicion. The resemblance to tropical ringworm was very suggestive when first seen, but, as was to be expected, a microscopic examination gave no evidence of such a causation. The papules further are quite unlike those of psoriasis, and they are not covered with scales, for the desquamation curiously follows in the wake of the extending erythematous border, and it would be contrary to all our knowledge to suppose that a psoriasis papule could run so acute a course, for any circinate or gyrate configuration in psoriasis is essentially dependent on the chronicity of individual lesions. The affection seems therefore to be a phase of annular erythema, which is peculiar in the sites specially favoured, in the appearance produced by the conspicuous ragged fringes of desquamating cuticle, and in the extraordinary persistence in the evolution of the eruption. With regard to the latter point I may remark that although in the text-books, erythema multiforme and nodosum are always described as running a more or less acute course, such is not invariably the case, for recent publications have taught us that by successive outbreaks some of the erythemata may become quite chronic, and we have long known a chronic form of urticaria.*

* I was much struck with the close resemblance to my case of a drawing of persistent *Urticaria annulata* given by Dr. Damon, in the 1st Medical and Surgical Report of the Boston City Hospital, 1870. As I could not find any description,

The *treatment* has presented great difficulties, and no remedial measures have been of the slighest benefit till quite lately. I prescribed steel and cod liver oil for both patients, and after a prolonged course they are certainly better in health and as regards the eruption than they have ever been; indeed the male patient has now comparatively little to complain of. I have not administered arsenic, as I know that drug has been tried thoroughly several times. Locally all greasy applications prove useless, and without benefit at least of a permanent kind; a simple calamine lotion with a little tar water agrees better than anything else with the male patient, and a dilute lotion made with Dr. Bulkley's liquor picis alkalinus with the girl.

XIII.—*A Case of Hydro-Encephalocele.* By R. E. Carrington, M.D. *Read November* 26, 1880.

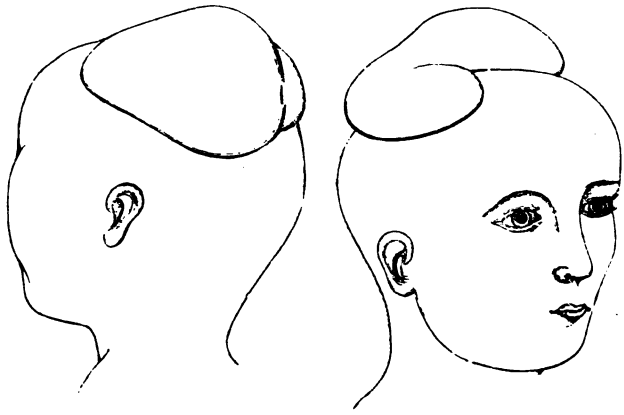
THE case which I have the honour of bringing before the members of the Society, was first shown to me by Mr. Fortescue Ingram, of the Chelsea Infirmary, and I am indebted to him for permission to bring the boy here for the second time, as well as for those points in his history which it has been possible to obtain. The patient was exhibited at one of the later meetings of the preceding session, but it was not possible then to read the notes of the case, and I am glad that this was so, as I am now able to give the history as it was then drawn up, now some seven months ago (April 1880), and also a further account of the changes that have taken place since that time.

The boy (Albert Trustwell) is seven years of age, and has been an inmate of the Chelsea Workhouse Infirmary for the past three years. His early history is necessarily very scanty, and probably not very reliable, but such as I have been able to obtain I have thought it best to record. His mother is alive, and a healthy woman; his father is dead, but all the rest of the family are alive and well, except a brother who has angular curvature. His mother states that there was great difficulty at his birth, that she was delivered by

Dr. Damon has very kindly taken the trouble to tell me that the case was one of urticaria of eight days' standing, occurring in a young man æt. 19 years. The wheals had a raised whitish centre and deep rosy bordering.

instruments, and that these slipped five times. Nothing however was noticed until the child was two years old; then the back of the head commenced to bulge, and the swelling has gradually increased until it attained its present dimensions. How long it has been stationary is, however, by no means certain, but from the time of his admission, up to that on which this note was taken (a period of two years), it has not markedly increased, although it has been at some times more tense than at others.

With the exception of the tumour the boy presents no other malformation. He is somewhat under-sized, measures 42½ inches in height, and is fairly nourished. His general health is good, he eats and drinks abundantly, and without difficulty, and is always cheerful. He suffers, however,



from fits. The mother states that these did not come on until one year after the commencement of the swelling, viz at three years of age, at which time he was knocked down by a cab, and that he has been so affected ever since.

Intellectually, he is remarkably acute, and exhibits all the cunning of the class of boy to which he belongs. He is incessantly talking, but all he says is rational enough, and to the point.

The head is very unsymmetrical. The right frontal bone and right side of the skull protuberant, the frontal eminence being especially large. The left side is, on the contrary, flattened.

At the upper and back part of the cranium is a large tumour measuring 14½ inches in circumference at the base, and 7½ inches from side to side over its apex. The swelling is quite sessile, with a broad base, and is partially divided into two by a groove extending from before backwards, the larger segment being on the left side. The appearance of the tumour is fairly illustrated by the accompanying outline sketches. It is of soft consistence, but the tension appears to vary from time to time. It very distinctly fluctuates, and an impulse is transmitted from side to side, from one division of the tumour to the other. It does not pulsate, and there is no tenderness nor pain upon pressure. Compression of the tumour causes neither discomfort, paralysis, nor movements of the limbs, at least when exercised within justifiable limits. The boy in fact, until admonished, used frequently to stand upon his head without any ill effect, appearing to regard his affection as a special arrangement for the practice of this accomplishment.

The swelling, tested by a strong light, is not translucent.

Coughing produces no impulse in the tumour itself, but the skin, just above the margin of the aperture in the frontal bone on the left side, bulges out slightly, but still indubitably, with each cough.

The condition of the bones seems to be as follows:—

The frontal suture is apparently well united, and the right half of the cranium well ossified. The tumour springs from a large opening in the skull, measuring as nearly as can be ascertained about four inches transversely, and two and a half inches from before backwards. The fingers can be pressed into the swelling at the edges, and the osseous margin of the opening distinctly made out. The deficiency of bone appears to extend from the anterior to the posterior fontanelle along the interparietal suture. There is a large gap in the posterior part of the frontal bone on the left side, abutting upon the anterior fontanelle, and the edge of the bone here is very distinct. Most of the abnormal foramen is on the left side of the cranium. There is a large defect in the left parietal bone, along the middle line of the vertex, continuous with that in the left frontal, and further a similar but smaller imperfection in the right parietal bone.

These deficiencies, all of which are continuous with one another, appear to make up the whole of the opening from which the tumour protrudes. The occipital bone appears to be well ossified and perfect.

The right eye does not open so widely as the left, probably from depression of the roof of the orbit.

There are no signs of rickets nor of congenital syphilis.

With regard to symptoms, the right arm and hand are distinctly weaker than the left, and the boy uses the latter by choice for every action. The movements of the right forearm are peculiar, resembling those of athetosis. When told to pick up an object with it, he approaches the forearm, rotating it from supination to pronation, the fingers being divergent and extended, they are then suddenly flexed and the object grasped.

The right leg is also weaker than the left, and there is a moderate amount of talipes varus.

The muscles are not wasted, and there is no affection of sensation, nor of the bladder or rectum.

His spine is quite straight and pliant, and there is no tender spot.

The fits, as has been mentioned, came on a year after the onset of the swelling, after being knocked down by a cab. They have no regular interval; sometimes he will not have an attack for weeks, at other times he will be seized several times in the day. There appears to be a definite aura, which however is not constant; this sometimes starts from his right hand, which commences to pain him and then to shake, at others there is a 'queer' sensation or pain in the tumour. The attacks usually last two or three minutes. The boy will perhaps be sitting up in bed when his body will become suddenly flexed, and he then loses consciousness completely. He bites his tongue frequently, and in an attack that occurred recently he fell and fractured his clavicle. As soon as the fit is over, he resumes his occupation, and is the same as before.

Two attacks have been of prolonged duration, one of which took place prior to his admission, and the other was watched in the Infirmary. The latter occurred on February 22, 1880.

The boy was found at seven P.M. lying in bed with his face turned to the left, and his eyes directed upwards but not fixed. The conjunctivæ were sensitive to touch; and the pupils to light, equal and dilated. When seen there were no convulsions, but the bladder and rectum had been evacuated.

There was a little spasmodic twitching of the lower jaw with some trismus.

His tongue was bitten, and frothy fluid exuded from his

mouth. His lower extremities, which had at first been flexed, were then extended. The right arm could be easily bent at the elbow, but the left was rigid.

The nares were dilating, and there appeared to be some spasm of the glottis. He was quite unconscious. The note, which was taken at the time, then states that he slept until eight o'clock next morning, and awoke drowsy and stupid, but after being washed he revived, and in two hours was himself again.

The convulsions affect no limbs in particular, but are usually general. The attacks are favourably influenced by bromide of potassium.

October 30, 1880.—Examined after an interval of seven months.

I find the dimensions of the tumour by measurement the same as before, but I think there has been some slight increase in size, because the osseous margin of the abnormal aperture can be more easily made out, especially in the left frontal bone. The outline of the swelling is just the same.

There is a very distinct increase of paresis in the right arm, and its circumference is half an inch less than the left. The peculiar movements are identical with what they were before. The muscles are flabby, compared with those of the other side.

The right leg is a quarter of an inch smaller in circumference than the left, and the muscles here are also flabby. In walking this leg moves less readily than the left.

The boy has developed a slight lateral curvature, the left scapula is more prominent than the right.

He has no optic neuritis.

The fits are now much more frequent than before. He never goes a week without them, and often has two or three in a day. They also last longer, and he is sometimes drowsy and semi-unconscious for two or three hours.

Every other condition seems to be the same as at the time of my first note.

I trust at some future time to be able again to present the boy to the attention of the Society, or at all events to report upon the progress of his case.

XIV.—*Two Cases of Varicocele with undeveloped Testicle; with remarks on the nature of Varicocele.* By A. Pearce Gould, M.S. *Read November* 26, 1880.

Case I.*—G. W., æt. 18, single, a waiter by trade, came under my care among the out-patients of the Westminster Hospital on Nov. 3, 1880, suffering from gonorrhœa. It was noticed that there was a large left varicocele, having the usual characters and forming a rounded mass below the testicle as well as behind and above it. The left testicle is of normal shape and about half the size of the right, or rather less, but of nearly, if not quite, the same firm consistence. The man has noticed the scrotal swelling about four or five months, but it has not occasioned any pain or other trouble, and it may have existed longer. The right testicle is of normal size and consistence. The testicular sense is slightly more acute on the left side, but of normal character. The man is tall, well formed, florid and healthy looking, has no other varicose veins visible; he has not had any injury or inflammation of either testicle, and he believes they used to be of the same size. He denies having practised masturbation, has not been continent for four years past, does not suffer from seminal emissions.

Case II.*—W. B., æt. 17, a porter by trade, came under my notice at the Westminster Hospital on Nov. 17, 1880. He was then suffering from an inflamed inguinal gland. Through the left side of the scrotum was plainly seen a large varix, the large twisted veins of which were prominent under the skin. There is nothing peculiar about the varicocele save its somewhat unusual size. The left testicle is less than half the size of the right; it is firm to the feel, and the testicular sense is slightly more acute than in the right. The right testicle is of normal size and consistence. The patient suffers no pain or inconvenience from the varicocele. He has noticed the swelling in the scrotum for six or seven years, and he does not think it has increased or altered at all during that time; is quite sure it was not there before that time. He believes the testicles used to be of equal size. The man is in robust health, with a strong muscular frame, is free from piles,

* The cases were shown at the Meeting.

or other visible varices. He has never had any affection of the genital organs, or, so far as he knows, injury to or inflammation of the testicles. He has not masturbated, and does not have frequent seminal emissions.

As there is such a marked difference of opinion among equally high authorities as to the influence of varicocele on the nutrition and function of the testicle, I have thought it worth while to bring forward these cases in the hope of throwing some light on a subject which is evidently obscure.

I will quote only the two most prominent living English authorities on this subject, Sir James Paget and Mr. Curling.

Sir James Paget* writes: 'No varicocele, to the best of my belief, ever did cause impotence or waste of testicle,' and again, 'I do not believe that it ever produced wasting of a testicle, or impotence, or any such thing.' Mr. Curling,† on the other hand, states, 'When highly or rapidly developed, the dilatation of the veins interferes so much with the nutrition of the gland as to occasion wasting. A softening and partial atrophy of the gland, co-existing with varicocele, has come under my notice in numerous instances; indeed, in nearly all the cases in which there was a decided dilatation of the spermatic veins on one side only, the testicle of that side was the smaller of the two.' 'We have evidence too, that the secreting powers of the gland are impaired, and sometimes even destroyed, by this disease.' Mr. Curling gives three examples in which the fluid of an emission was found, on examination, not to contain spermatozoa—one of the cases being Gosselin's.

Sir Astley Cooper‡ was of the same opinion as Sir James Paget, but agreeing with Mr. Curling we have Landouzy,§ Richter,‖ Erichsen,¶ Gross,** Gant,†† Holmes,‡‡ Humphrey,§§ Hurgeston,‖‖ Bumstead and Taylor,¶¶ Pott,*** Will,††† and others. It is of course impossible to discuss or criticise the negative evidence of Sir Astley Cooper and Sir James Paget. On the other hand, when we come to examine closely the cases recorded as instances of atrophy of the tes-

* 'Clinical Lectures and Essays.' † 'On Diseases of the Testis.'
‡ 'Observations on the Structure and Diseases of the Testis.'
§ 'Du Varicocèle.' ‖ 'Observationes Chirurgicæ.'
¶ 'Science and Art of Surgery.' ** 'System of Surgery.'
†† 'Science and Practice of Surgery.' ‡‡ 'Surgery, its Principles and Practice.'
§§ 'A System of Surgery,' edited by Holmes.
‖‖ *Medical Times and Gazette*, 1852, vol. 2. ¶¶ 'Venereal Disorders.'
*** 'The Chirurgical Works of P. Pott,' edited by Earle.
††† *Lancet*, 1880, vol. 1.

ticle from varicocele, we find that several of them are of no value whatever for that purpose, as both the varicocele and the wasting of the testicle followed an injury to the scrotum of greater or less severity, and even should other facts lead us to suppose that the two conditions are related to each other as cause and effect, we must put such cases out of view altogether in our present investigation.

The three cases recorded by Pott* are for this, among other reasons, valueless in our present enquiry, and so also is the case recorded by Dr. Will, and possibly the others which he mentions having seen, as he incidentally remarks that 'in all the cases where the varicocele has been a large one, the history has pointed to a traumatic origin.' We must exclude Key's case recorded by Sir Astley Cooper, because there had been previous inflammation, and in fact, all cases where the varicocele has resulted from a blow, or followed an inflammation; atrophy of an organ after injuries or inflammation is so common that I need not justify this exclusion. When we have done this, we have several cases remaining in which there is no precise history given, and of which therefore we must speak with some hesitation. They arrange themselves into three groups:—In the first I would place the cases under consideration. I think that it is hardly possible to controvert the view that in these men, G. W. and W. B., the small size of the right testicle is in some way connected with the associated varicocele, and not a mere coincidence.† But it is just as clear that the testicles are *small* and *not wasted*; they are of their natural shape and firmness, and preserve their peculiar sensibility, and present all the characters of the healthy testicle just before its full development at puberty,—*they are undeveloped testicles*—and I would submit that these cases are examples of the effect of varicocele in preventing the full development of the testicle at puberty. The one lad, æt. 17, had noticed the swelling in the scrotum six or seven years, and although the other, æt. 18, had only been aware of the varicocele for a few months, as it had not occasioned any pain or inconvenience, and was only noticed accidentally, it is quite open to us to believe that it has really existed longer. That varicocele is met with, and is even rather common before puberty, is certain; and it is not at all surprising that its existence or formation should in some way

* *Loc. Cit.* † Appendix A.

interfere with the important developmental changes occurring at that time.

2. In the second group I would place the cases believed to be quite common, where the testicle on the side of the varicocele is said to be not quite so large or firm as the other cases of very slight atrophy. I have already quoted Curling's reference to these cases. I believe that I have met with some examples, but it is difficult to estimate with certainty the size of the testicle when surrounded by dilated veins. I am sure, however, that I have never seen the left testicle larger than the right—its normal relation—when its pampiniform plexus was markedly varicose.

3. The third group includes the cases of marked unmistakable atrophy of the gland. Examples are recorded by Curling, by Richter, who speaks of having seen the testicle 'a mere rudiment,' by Landouzy who speaks of one case where the testicle was very soft and not so big as a large hazel nut; by Bumstead who writes that the testicle is 'in some cases reduced to the size of a pea, and sometimes it seems wholly absorbed,' and by Gross who says the 'testicle is liable to become soft and shrunken.' I have never met with a clear and marked case of true atrophy of the testicle which was certainly due to a varicocele, and I know of no case on record of which the description is so precise that it puts it beyond question that the small testicle was not either an undeveloped gland, or one wasted from injury or previous disease. While, however, we have no conclusive evidence on this head, it appears to be hardly justifiable to speak dogmatically in the negative, for we are quite unable to state that in many of the recorded cases there had been an injury or inflammation. And there is so much *à priori* reason to lead us to expect such a result that it is easier to receive than to reject such evidence as we have. That a bad varicocele may induce sterility, the cases carefully investigated by Curling and Gosselin surely prove. Cases are on record where the radical cure of the varicocele has been followed by a growth of the so-called wasted testis,* (Curling, Barwell).† Thirteen months ago I operated on a man with varicocele, who was suffering from a good deal of pain in the part, with a sense of 'emptiness of the belly' after copulation, and the left testicle was slightly smaller

* Mr. Curling's work on 'Diseases of the Testis.'

† After the reading of this paper Mr. Bryant mentioned a very excellent example (*vide Lancet*, Dec. 1880).

than the right. He has lost all pain, is 'much stronger' sexually, and his left testicle is firm and plump, and if anything, larger than the right organ.*

The much greater frequency of varicocele on the left than the right side has been variously attributed to the greater length of the left spermatic vein, to its passing beneath the sigmoid flexure, and to its mode of entrance into the renal vein. An examination of these explanations makes it appear probable that there is some other factor present. The difference in length of the two veins is slight, and does not exceed that between the two iliac veins, which has not led to a similar disproportion in the occurrence of varicosity in the veins of the lower extremities. The influence of a loaded sigmoid flexure has never been demonstrated. In only a small proportion of cases of varicocele can any history of chronic constipation be elicited, and the proportion is not greater than in men of the same age and class who are not suffering from varicocele; and on the other hand, I do not think that varicocele has ever been found to be a frequent concomitant of constipation. I recently operated on a gentleman who assured me that his varicocele always troubled him most when his bowels were confined. This is far from proving that the constipation caused the varicocele.

The difference in the mode of ending of the two spermatic veins is more generally held to account for the fact we are discussing. The left spermatic vein most frequently enters the renal vein at right angles, and in all the cases I have yet examined, where this has been the case, the opening has been guarded by a single or double valve, which I demonstrated to be capable of completely preventing the passage of any fluid from the renal into the spermatic vein. It is not at once apparent how this valve acts; no doubt it aids and does not retard the circulation. As the circulation in the renal vein in health is practically equable, not being exposed to muscular pressure or other causes of temporary obstruction to the on-flow of blood, or of increased blood pressure, it appears probable that the valve has a constant, not an intermittent action. But if it be held that the use of the valve is to prevent regurgitation of blood, evidently it can only succeed in this when quite closed, and in that condition the flow of blood in the spermatic vein must be stopped entirely, there being no anastomosing channels along which the blood can pass; by how much is this better than

* This patient was shown at the Meeting.

regurgitation? There are valves lower down in the spermatic vain as well as at its mouth, and if there were obstruction at its mouth, the valve next below would be closed, and the first part of the vein to suffer from the obstruction would be the upper intervalvular segment, but the dilatation of varicocele is an affection of the scrotal portion of the veins and not of the upper part at all.

The lower valves can evidently have a different purpose, for where there are two or more veins, when one is closed to the blood, it can traverse the other or others, but where the vein is single and without anastomoses this is evidently impossible. I would suggest that the valve at the orifice of the vein may be of use by being partly opened, and in such a manner as to convert the direct aperture into an oblique opening directed upwards and to the right. In confirmation of this view I may mention that in a case where this valve was absent, the upper one and a half inch of the vein took an oblique course to the right, as if it thus compensated for the absence of the valve. By thus narrowing the aperture, the aspiration of the blood in the renal vein as it flows over it would be increased, and some compensation afforded for the vertical course of the spermatic vein. There are, however, several examples of veins opening at right angles into others, and without any ill effects upon the circulation in them; it is seen in the termination of the circumflex iliac veins, the lumbar veins, the renal veins, and in some of the intercostal veins, and in the vena azygos major.

Were this anatomical arrangement the main cause of varicocele, we ought to find the affection even more common than it is, and as the obstruction, if any, is constant and but little varying during health, we ought to witness serious effects upon the testicle from the impeded return of blood—œdema, loss of function. Nor must we forget that such an explanation supposes a condition unique in the human body, the anatomical relation and structure of a part the direct cause of its disease; we are quite familiar with many examples of the manner in which anatomical arrangement and structure *modifies disease*, but in no other case, I believe, do we find it the *exciting cause* of disease. Still further in opposition to this view stands the fact that those diseased conditions which greatly increase the blood pressure in the renal vein, even to the extent of producing hæmaturia, and therefore (according to this view) the obstruction to the emptying of the spermatic vein, have not been noticed to induce

varicocele. Has obstructive disease of the heart, or lungs, or pressure upon the vena cava, either from cancerous nodules in the liver or ascitic fluid, been found to produce varicocele? M. Brixoux* had a case in which a cancerous mass pressing upon the spermatic vein caused a large varicocele, showing that the disease can be produced by such damming back of the blood. When also we remember that one occasionally successful form of treatment of varicocele is the pressure of a truss applied to the cord over the external abdominal ring, we have still further reason for doubting whether the ending of the left spermatic vein has any but a very slight influence upon the production of varicocele, even if we can fairly attribute to it any at all.†

In comparing varicocele with varices of the lower extremity, there are some important differences between them which are sufficient to suggest that they may differ in nature more widely than their names imply. Varicocele certainly is not a disease of late middle life and commencing old age; it does not become frequent when the arterial pressure is lessening, and the difficulty of the venous circulation increasing. But it is most often noticed just when the testicle is passing through its most important development, or even before that, and exists during the period of its early activity. It is well to remember that varicocele may remain long unnoticed by its subjects, and that although only noticed in early manhood may really have developed much earlier. I have met with several instances of varicocele developed before puberty, and I have detected others of the existence of which the subjects were quite unaware. Although varicocele very often develops between puberty and twenty-five, I believe that, could we get accurate information, we should find that it most commonly commences just before and at puberty.‡

Other rather peculiar features of this affection are that it often remains stationary for years; that it has been noticed to undergo spontaneous cure at even so late an age as thirty, and that even when of large size it may produce no symptoms whatever, no pain, no sexual debility, no wasting of the testicle. It is rare for large varices of the lower leg when quite unsupported—and a varicocele is commonly peculiarly unsupported by the loose scrotum—not to give rise to any nutritive or nervous disturbance, and to undergo spontaneous cure.

* Landouzy 'Du Varicocele.' † Appendix B. ‡ Appendix C.

Another point of difference between them is the fact that the veins of a varicocele, although enormously dilated, are not subject to thinning of their walls and ultimately to rupture as frequently occurs in varices elsewhere; this may be held to be connected with the different time of life and nutritive condition at which they occur. Mr. Erichsen mentions two cases of hæmatocele following varicocele, but in each case it was excited by a blow.*

Varicocele often reaches a large size, and occasionally is so immense that it proportionately far surpasses the development of other varices—a case is mentioned by Landouzy † where the tumour it formed was as large as the head of an infant at birth. Heredity is a point difficult to trace in this disease; the affection is not obvious, and is not one the existence of which in the father would be likely to be known by the son: but M. Blandin ‡ has recorded a family in which the father and three sons each had varicocele, and Landouzy speaks of a similar case. Gross says 'it occasionally occurs in several members of the same family.' §

Putting all these facts and considerations together, I would submit that at any rate some varicoceles are not the result of a yielding of the veins to internal pressure, but are produced by a primary growth of venous tissue—are in fact venous hypertrophies. The normal pampiniform plexus is a striking arrangement, and the developmental activity in the veins forming it remarkable; it surely shows some special tendency to develop veins just at this spot in the embryo. And if so, what more likely to happen than that at puberty, when the testicle is undergoing its full development, or should do so, the veins should again take on the same active growth and overstep the limit between the normal and the deformed. If this view be correct, we may perhaps represent the cases shown to-night as resulting from a transference of the developmental stimulus of puberty from the testicle to the veins; while those who see in continence the cause of varicocele, and in marriage its cure, will find this a simple pathological explanation of their view.

There are other examples of such primary venous hypertrophy passing under the name of varicose veins. I refer to the hypertrophies of one or other of the saphena veins, in part or all their extent, met with in young robust men, frequently hereditary, or attacking more than one of the

* Mr. Bryant recorded two similar cases when this paper was read. *loc. cit.*
† Landouzy, 'Du Varicocele.' ‡ *Loc. Cit.* § *Loc. Cit.*

same generation in a family, producing no symptoms, no disturbance in the nutrition of the limb, and differing in all but name from the varicose veins coming on later in life and causing so many and serious troubles.

Appendix A.—It may be worth while to state here, the reasons that led me to think the view expressed in the paper the only tenable one. They are: (1.) That atrophied testicles are soft, flabby, misshapen, without testicular sense, and with a peculiar sensitiveness in some cases, and with wasted cord. Nothing of the kind existed in these cases. (2.) That varicocele is not a frequent sequel to atrophy of the testicle where that has been noticed to follow mumps, etc. (3.) The effect upon the testicle of the cure of the varicocele in similar cases.

As showing how the growth of the testicle at puberty may be impeded, and so having some bearing upon these cases, I quote the following passage from Curling's work on 'Diseases of the Testis:' 'In cases of congenital inguinal hernia, the testicle, even in its natural situation, was not of its proper size at the period of puberty, so that when the infirmity existed on one side only, the testicle was not more than one-half to two-thirds the size of the other gland.'

Appendix B.—In reference to the occurrence of varicocele most often on the left side, it is well to remember that the same is true of some other diseases, and notably diseases of the veins—venous thrombosis, phlegmasia alba dolens.

Appendix C.—Landouzy speaks of one case in which the varicocele had existed from infancy, and of another where it came on at the age of seven. Mr. Bryant (*loc. cit.*) has seen three or four cases of varicocele before puberty, one in a boy of seven. I have had one case in a boy of four, and another in a boy aged eleven.

Landouzy gives the following statistics:—

In 13 cases	first noticed the varicocele	between	9 and 15	years.
In 29	"	"	15 and 25	"
In 3	"	"	25 and 35	"

Curling's statistics are:—

2 cases	between	10 and 15 years of age	when they came	under notice.
26	"	15 and 25	"	"
14	"	25 and 35	"	"
5	"	35 and 45	"	"
3	"	45 and 65	"	"

Gross says: 'It often begins very early in life'; 'now and then as early as eleven.'

XV.—*A Case of Ulceration with Hypertrophy and Dilatation of the Colon. Perforation and Peritonitis.* By JAMES F. GOODHART, M.D. *Read November* 26, 1880.

EMMA R., æt. seventeen, was admitted into the Clinical Ward of Guy's Hospital, under my care on August 25, 1880, with the following history. For the report of the case I am indebted to my clinical clerk, Mr. W. Spong. Her father is dead—the cause of his death is unknown. Her mother is still a healthy woman. One brother died after rheumatic fever. The patient has always had delicate health; has never had rheumatism. In December 1879 her usual health began to fail; but she had no definite symptoms—no special pain. Her abdomen has been gradually increasing in size since January of the present year, but more rapidly in the last month; and she has been worse for three weeks in her general health. She has never had severe pain in the abdomen, but has had slight sudden pain at times. The bowels have been irregular since January—since, that is to say, the onset of the abdominal swelling. Sometimes she has had constipation, at others diarrhœa. For the last three weeks the latter state has existed; the bowels acting seven or eight times a day, the motions being offensive and blackish in colour; and for three weeks she has been unable to retain her motions. The action of the bowels has caused no pain.

When admitted she was remarkably anæmic and spare. She was so bloodless as to suggest that she had lost blood from some source. She had an anxious expression; a pulse of 128; and the abdomen was much distended.

It was at first thought by the clinical clerk that some abdominal tumour was present; and certainly on first placing the hand on the abdomen the case had that appearance; for a large very hard mass was felt to occupy the right side from the iliac region to the hypochondrium. But on a more prolonged palpation this tumour disappeared, to be succeeded by the occurrence of one in the epigastrium or left iliac region. Moreover there was resonance all over the abdomen, and on inspection the intestine could be seen in peristaltic action. The umbilicus was distended, but there was no

thrill. The abdomen was not tender, and there was no evidence of any enlargement of the liver or spleen.

She was suffering from a rather profuse diarrhœa, the motions being dark-coloured, quite liquid and offensive; but she repeatedly stated that she had little pain at any time, and none when the bowels acted.

There were no other points of importance in the case. There seemed to be rather bronchial respiration at the left apex, but she was thin-chested, and it might or might not mean much. The heart was displaced upwards, its impulse being best marked in the second space; but the sounds were quite normal. The urine 1020, not albuminous. Temperature 100° Pulse 120. The points upon which our diagnosis rested were these:—

Her age, the extreme pallor, emaciation, and evident severe illness, the abdominal distension, with increased peristalsis and frequent diarrhœa. All these symptoms slowly increasing in the course of eight months, led to the conclusion which I think few will criticise, that the patient was suffering from tabes mesenterica; that the disease of the mesenteric glands had led to shortening of the mesentery; and this to intestinal obstruction, which was still capable of being overcome by the hypertrophied bowel, and hence the frequent diarrhœa. I compared it with the case of a child who had been partly under my care some months before, suffering from mesenteric abscess, and in whom a fistula subsequently formed at the umbilicus; the obstruction relieved itself in this way, and considerable amelioration was obtained for many months. I hazarded the opinion that, from the distended appearance of the umbilicus, a similar occurrence might happen here. But she was so ill that I did not think she would live long under any circumstances. The diagnosis seemed to me to be so clear that I never suggested any other alternative one, and there was nothing in the progress of the case, during the few days she lived, to arouse any suspicions as to its correctness.

She was ordered the liq. bismuthi with the liquid extract of bael, and under this treatment the diarrhœa was checked, though it by no means ceased. Her temperature and pulse were as follows:—

26th.—T., 99. P., 120. E. T., 101·6.
27th.—M. T., 98·8. P., 128. E. T., 99·4.
28th.—M. T., 99·6. P., 128.
29th.—M. T., 100·6. P., 136.
30th.—E. T., 100·4.
31st.—M. T., 101. P., 136.

On this last date she was seized with abdominal pain, at first slight, but gradually becoming very severe, and, in spite of the free administration of opium and brandy, she speedily became collapsed and died, evidently from an acute attack of peritonitis.

The inspection was made by Dr. Horrocks :—

Body extremely pale, slightly made, a little œdema about both ankles. Slight superficial excoriation about anus, and black pultaceous fæces exuding in quantity. No scars, no enlargement of superficial glands. Teeth good. No corneitis. The heart weighed only 5 oz.; it was healthy. The lungs were healthy.

The abdomen was enormously distended and tympanitic. On throwing back the abdominal parietes and exposing the intestine, the colon was seen to be greatly dilated and occupying the entire front of the cavity. The sigmoid flexure occupied the *right* iliac fossa, having pushed the cæcum, which was not enlarged, backwards and inwards. Tracing the bowel from the ileum along the ascending colon, it was found that the large intestine suddenly dilated about the hepatic flexure. Below this point it became wider and wider, so that the rectum formed a huge cylinder. The dilated part contained a large quantity of black pultaceous fæcal matter, without scybala, and some of this was exuding into the peritoneum from a small perforation in the sigmoid flexure. The peritoneum contained some very foul gas and a small quantity of purulent fluid. The dilated colon, particularly its lower part, was almost cartilaginous in its toughness, and was hypertrophied to about a sixth of an inch in thickness. On laying it open, two superficial ulcers were found close to the anus, each the size of half-a-crown and more or less oval in shape; a little higher up were two others, and in the sigmoid flexure was a large one with sinuous margins, in the middle of which was a small sloughy patch with a central perforation previously described. Higher up still the mucous membrane was reddened in several places, and here and there was an erosion. All the ulcers presented similar characteristics; the mucous membrane was destroyed, leaving the muscular fibres exposed; the surfaces were smooth, and the edges were thickened and rounded.

The remainder of the bowel—the small intestine and stomach—were healthy, and contained little fæces or food. There was no stricture of the rectum or anus, and no fissure. The uterus, ovaries, liver, spleen, and kidneys were all healthy.

After the colon was laid open it was measured from one cut edge to another, giving the circumference at the several parts as follows:—Cæcum, 7½ inches; hepatic flexure, 11 inches; sigmoid, 13 inches; rectum, 17 inches; ileum, 3½ inches; duodenum, 4½ inches.

Remarks.—This case, taking into consideration all its features, is a very unusual one, and must, I think, be very rare. For this reason it is worthy of record, if for no other. The rarity of such conditions as these, in a girl of this age, makes me hesitate to say that with a wider experience, I might have aimed at a more correct diagnosis, because, unquestionably, the symptoms and physical signs were such as might have been present in tabes mesenterica—and tabes mesenterica would always be infinitely more probable, and, therefore, the correct diagnosis to make. But, I am bound to say, with the increased knowledge of the case that the post-mortem has given, that the hypertrophied bowel did produce, when contracting, masses of such hardness in the abdomen as struck me at the time as being very unusual, even under the condition of obstruction which I assumed to be in existence; and I leave this point open to discussion, whether the obstructions produced by tabes, after the fashion I have named, by adhesions, sharp bendings of the coils across enlarged glands, shortening of the mesentery, and so forth, ever lead to such a condition of hypertrophy of the bowel as is exhibited here. I doubt whether they do. Supposing, therefore, that in any future case the intestine were to be felt to knot up into lumps—which, without any exaggeration, felt as hard as the hardest of uterine fibroids—as did this thickened colon, would it not raise a strong doubt as to the mesenteric origin of the affection? I must also remark upon the absence of pain in the case. No doubt this is difficult to explain, even under the conditions of ulceration, which actually existed; but in tabes mesenterica pain is certainly one of the most marked and troublesome features of the disease. These are the only two points which, even now, seem to suggest any doubt about the nature of the case; and upon the diagnosis I have no more to say.

The relations of the hypertrophy and dilatation of the bowel and the ulceration to each other and to the clinical picture afford more scope for discussion, and they seem to me to be involved in much obscurity. It must be remembered that for eight months there had been emaciation, increasing anæmia, increasing enlargement of the abdomen,

without pain, and with a habit of bowels which was sometimes constipated and sometimes the reverse. If I were to discard the history altogether, it would, I think, be easy to suggest a very plausible hypothesis, of this fashion: ulceration of the rectum near the anus, leading to spasm of the sphincter, and, consequent slow accumulation of the contents of the colon. The girl being averse to calling attention to such matters, putting up with the inconvenience, and concealing any pain that there might have been, allowed the colon to pass gradually into the condition of hypertrophy and dilatation which was found. But to accept such an explanation as this, one would have to assume the preexistence of ulceration of the colon—an unusual disease in girls at this time of life, and for which no cause can in this case even be suggested—and I doubt whether we are at liberty to do this in the light of the known relations which exist of cause and effect between dilatation of the bowel and ulceration. There are now several, if not many, cases on record in which distension of the bowel has been followed by ulceration: an explanation of the ulceration, which, if any cause for the *dilatation* can be found, is certainly applicable here. In the absence of any obvious cause of ulceration of the colon, syphilitic or other, it has occurred to me that the anæmia and general ill health from which the patient suffered make the general features of the case not unlike those of a few cases on record where dilatation of the *stomach* has occurred in young people, without the existence of any obstruction at the pyloric orifice. Such cases appear to be paralytic rather than obstructive, and it seems to be possible—at any rate, it is a point worth discussion—that the disease in this case may have been a primary paralytic distension of the transverse and descending colon; the ulceration resulting as a natural and extreme consequence. Such a hypothesis as this suggests another not unimportant question: whether any paralysis is likely to be followed by hypertrophy so extreme as is evident in this case. But this is perhaps not much of a difficulty, when it is considered that there is evidence in the case of the heart that moderate dilatation—and there is no evidence to show that the distension of the colon in this case in the first instance was anything more than moderate, on the contrary, the clinical history goes to show that it was not extreme—that moderate dilatation and hypertrophy go on simultaneously.

From the point of view of paralytic distension, it is also necessary to add that some might perhaps consider this to be a case of extreme constipation in a hysterical subject, and this view requires to be stated for two reasons: (1st) in order to say that it is strongly negatived by the history of the case, and the ill health of the patient; and (2ndly) because I think that this history of hysterical constipation rather goes to disprove the view of this case that I have put forward. I would ask, has hysterical constipation, even in the extreme forms associated with vomiting, ever been known to lead to such a state of things as this? And, if not, in what does the distension of colon in hysteria differ from the paralytic distensions which I am now assuming to have existed here? It would not, I think, be difficult to show that, though apparently similar, the two conditions are quite different; but that is a point which may well be left for discussion.

One point further as to treatment. The patient died, as many cases of chronic ulceration of the bowel do, by the occurrence of a perforating ulcer in the centre of the ulceration. But the question I would ask is this: Supposing the case had been correctly diagnosed and the bowel emptied, let us say by repeated enemata, is there any evidence in existence to show that such an amount of hypertrophy and dilatation could return to the normal condition of the bowel? I think, on the whole, that cases of chronic dilatation of the stomach, treated by washing out the cavity, must go to show that such a return is possible. But I am not sure, as the evidence of the amount of the hypertrophy in the cases relieved is wanting; and the excessive hypertrophy, not the excessive dilatation, I take to be the chief obstacle to the cure. And, on the other hand, cases demonstrably due to extreme hypertrophy and dilatation of the stomach have resisted all treatment and died.

XVI.—*A Case of Right Hemiplegia after Scarlatina: Embolism of Middle Cerebral Artery: Destruction of Broca's Convolution without Aphasia: Death from Diphtheria.* By FREDERICK TAYLOR, M.D. *Read November* 26, 1880.

ROBERT W. C., æt. 5 years and 4 months, was admitted into the Evelina Hospital for Sick Children, under my care, December 22, 1879.

The following history was partly given by the mother, but has been supplemented by information kindly afforded me by Dr. Rumboll, who saw the child at first:—

About seven weeks before admission it was attacked by scarlatina. The rash affected the legs only, but there was a great deal of scarlatina in the neighbourhood, and there appears to be no doubt that this illness was of the same nature. The throat was sore from the first, and gave a good deal of trouble. He was at times nearly choked, and fluid ran out at the side of the mouth. Poultices were applied to the front of the neck, and, it is said, something broke and discharge came from the mouth and nose.

About fourteen days after the commencement of the scarlatina, he had hemiplegia on the right side. His mother says they found the arm quite limp and useless, and the leg equally useless, but stiff, as if it had occurred quite suddenly. From the medical gentleman, Dr. Rumboll, however, I understood that its access was more gradual. There appears to have been nothing of the nature of aphasia. The friends are quite clear on this point, and it is confirmed by the medical attendant. Instances are given by the mother of his answering questions intelligently, and in long connected sentences. He could feel in the leg, but not in the arm. After the first onset of paralysis he became subject to what the mother called 'stupors' every two or three days. In these he became faint, and slightly convulsed all over him, 'but not the arm.' During these he appears to have lost his senses, but on recovery he could speak quite well, except on one occasion, two days before admission, when after one of these he only mumbled, but soon recovered his usual power of speech.

Fourteen days before admission the skin of the right hand began to slough. A few blisters appeared over the metacarpal bone of the fore-finger, at first containing clear, colourless fluid; later, they became yellow, and then the skin around them turned brown.

About a week before admission, the right arm and leg became œdematous. The urine also was scantier than normal, but when this commenced is not known.

There is nothing in the family history bearing upon the case. The child was suckled only for three months, and was then bottle-fed. It had diarrhœa at the age of nine months, continuing for four or five months, and the child

wasted in consequence: it had whooping cough last year for two or three months.

From birth, however, the child never used its right hand properly: the arm was rotated inwards, and hung loose when he ran; he would bowl a hoop with his left hand, and was in fact left-handed, only using the right hand occasionally. From the time he began to walk, at the age of 2 years, he had always tumbled about a good deal. This fact I only obtained from the mother some time after his death.

On admission, he was a fairly nourished boy, with general roughness of the skin, which was desquamating about the arms and toes. There was slight œdema of the face, of the right hand and of the left foot. He was unable to sit up alone, and could not use the right arm or leg; there was no apparent difference in the two sides of the face; he felt pinches on the right arm and leg.

Nothing abnormal was seen on examination of the fauces; but he had some difficulty in swallowing. The abdomen was soft and resonant; but he complained of pain in the belly, which he referred to the umbilicus. The liver and spleen were not felt.

The heart's impulse and sounds were normal; the lungs resonant, with harsh respiratory murmur and occasional rhonchus on the left side.

He passed urine naturally: it was turbid, but not smoky, of sp. gr. 1010, and albuminous.

On the dorsum of the right hand, at the spot above mentioned, was a black-brown patch, the size of a sixpenny piece, continuous with a more elongated patch running up to the wrist, of a purple hue, with a thin red margin. Other sloughy patches existed on the outer part of the hand, both in front and behind. Temp. 99·6, resp. 28.

The further progress of the case, during the remaining three weeks of life, may be shortly summarised. The paralysis persisted and the right arm became rigid. From the back of the hand a large slough separated, leaving a greyish unhealthy looking surface. The speech was never affected at all; he spoke distinctly and rationally always, appeared to have a good memory, and often made observations spontaneously. In the first days of January there was a great deal of semi-purulent discharge from both nostrils; and the fauces were reddened and clogged with thin puriform fluid. From this time he got much weaker. On the evening

artery. There was no meningitis. The brain was cut horizontally, and the ventricles were opened in the usual way, with the following results. The convolutions softened were the posterior portions of the second and third frontal, the lower parts of the ascending frontal and parietal, the supramarginal convolution, and the convolutions of the island of Reil. The softening extended into the white matter of the hemisphere, more than half-way towards the middle line, in irregular tongue-like processes, and the diseased part had a dirty pinkish grey colour, with here and there patches of rather bright yellow, suggesting hæmatoidin. The corpus striatum was of a greenish-yellow pus colour, rough on the surface, deprived of ependyma, and apparently necrosed *en masse*; its outer part bounded the ragged cavity above

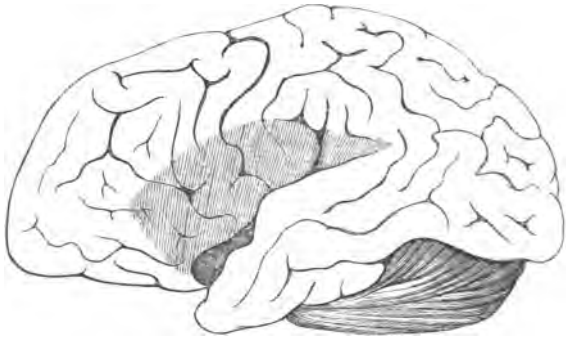


Diagram of the left half of the brain. The shaded area shows the region affected with softening.

described in connection with the island of Reil. On section, it was impossible to distinguish between the constituent nuclei and the white matter, the interior being uniform grey pink and yellow, with a few minute veins visible in it. The change in the corpus striatum was limited behind by the tænia semicircularis, but the outer part of the optic thalamus presented some white softening. The inner capsule was clearly destroyed in its anterior half; behind the genu, it was affected at its outer margin, but much of its inner margin, adjacent to the optic thalamus, had a normal appearance. The softening in this neighbourhood came close down upon the roof of the descending cornu of the lateral ventricle, but the cornu itself and the contained hippocampus were unaffected.

The left crus cerebri presented no band or bands of

grey degeneration on its surface, but its inner margin was softened without change of colour. Transverse sections of the pons and medulla showed nothing abnormal; but these parts were preserved for hardening in chromic solutions.

The upper part of the pharynx presented a quantity of diphtheritic membrane. This covered the apertures of the posterior nares, the pharyngeal wall all round at the same level, the posterior surface of the soft palate, and slightly the pillars of the fauces. On the pharyngeal mucous membrane it did not spread lower than the level of the top of the larynx. Above, it formed a continuous yellowish-white, thick, firmly adherent membrane, lower down it was in separate small patches. Similar patches were found on the back of the epiglottis. The rest of the epiglottis, and the interior of the glottis, especially the true vocal cords, had a granular appearance, as if from inflammatory infiltration; and down the whole length of the trachea was a consistent layer of membrane, thin enough to be semi-transparent, but irregular in thickness, yellowish in colour, granular on the surface, and easily detached in the form of a tube from the smooth mucous membrane beneath it.

The lungs presented a considerable amount of lobular pneumonia at each base, and scattered patches elsewhere. Pus was found in the minute bronchial tubes of some parts.

The pericardium was healthy. The heart normal in size and the proportion of its parts. The interior of the aorta and valves were reddened by decomposition; the valves healthy. The mitral valve presented, along the free margin, some extremely minute granulations, which stood out pink from the surrounding pale valve (? decomposition), and another incomplete line of small vegetations about one-fifth of an inch within the margin on the auricular face of each cusp.

The liver weighed 15 ounces, and the spleen 1½ ounce; they were both healthy.

The right kidney weighed 3¼ ounces, and measured 4 inches by 1¾ inch. It presented two embolic patches, the larger of which had the usual yellow wedge-shaped section, and was represented by a depression on the surface, one square inch in extent. The left kidney weighed ¾ ounce, and measured 2¼ inches by 1½ inch. It was lobulated on the surface, and had no infarcts. Both organs were rather pale, with a relatively wide cortex.

The stomach and intestines were normal.

The right hand presented the result of the sloughing

process previously mentioned—an irregular ulcer 1 inch by ½ inch over the abductor indicis, with a green base and red injected edges; a slough between the thumb and index finger extending to the palm; dusky red œdema round the thumb-nail; a small circular slough on the first phalanx of middle finger; and sloughing around the nails of the middle and ring fingers.

Remarks.—I have ventured to bring this case before the Society, because I thought it formed a contribution of some interest, especially in relation to infantile hemiplegia and to aphasia.

In the first place, it is an instance of the apparently spontaneous occurrence of hemiplegia during convalescence from one of the exanthems. Such cases occur from time to time, and one cannot generally ascertain with certainty what has been the immediate cause of the symptoms.

Among nine cases of infantile hemiplegia that I collected for the 'Guy's Hospital Reports,' two arose in this way. One had convulsions after scarlet fever, at the age of 5 years; and these were followed by permanent hemiplegia. Another had convulsions during small-pox, at the age of 3 years, and similarly suffered from paralysis of the arm and leg.

When we look for a cause, the degeneration of vessels common in adults is out of the question; and the patients may live to an advanced age with no essential modification in the symptoms, so that cerebral tumour is improbable; and the physical signs, as well as the long duration of life, may negative the existence of permanent cardiac disease.

It is known that thrombosis of vessels is very liable to occur in connection with febrile diseases, and in the absence of any evidence of endocarditis it might have been supposed that was the case here; but from the post-mortem results we must conclude that the obstruction of the middle cerebral artery was the result of embolism. The thrombosis, which, it is true, must have preceded it, was then not thrombosis in the vessels as a direct result of the condition of the blood, but the deposit of fibrin on the mitral valve in consequence of the inflammation, now indicated by the minute vegetations along its edge.

This reading of the facts by no means excludes the possibility of other cases of hemiplegia in exanthems being brought about by thrombosis alone. In one case recorded, to which I have already alluded, the patient died of phthisis twenty-two years after the occurrence of paralysis; and the

examination revealed a small cavity at the outer side of the corpus striatum, clearly the result of softening, but without evidence to show by what means it was brought about.

The next point of interest is the condition of the brain. It will be seen from the drawing (p. 93) that the softening involved the whole of that region which on the left side is considered to be the seat of the speech centre. This was a necessary result of the complete obstruction of the middle cerebral artery. The posterior part of the third frontal convolution, the lower end of the ascending frontal, and the outer adjacent portion of the island of Reil, were destroyed. Nevertheless, the power of speech seems never to have been affected. The child spoke clearly and connectedly, and this faculty was never lost even in the earliest periods of the disease. It will be remembered that the child was left-handed, in consequence of want of complete power over the right limb from birth; and so this case, though negativing the theory which fixes the faculty of speech in the left frontal convolutions, is in accordance with that modified view which associates the power of speech with the side of the brain most educated for muscular movements.

The explanation of this case must depend on the views that are to be held of the localisation of speech. It may be that the brain starts at birth with both frontal convolutions equally ready to do the work of speech, and that the left or right centre predominates, according as the right or left arm is educated. If that were so, it might be asked whether in this case, at the age of 5 years, the differentiation of the centres from one another, in consequence of muscular development, was sufficiently complete to make it matter much which side became injured. This question would be at once answered by cases, if there be such, of ordinary right-handed very young children, having right hemiplegia with aphasia.

No doubt, however, hereditary transmission must have much to do with their association, as it is found in ordinary paralytic cases, and as it is assumed to exist in individuals who are luckily not submitted to this form of pathological experimentation. Whether right brained localisation of speech is hereditarily transmitted is, I suppose, not known; and one would be inclined to believe that the occurrence of left-handedness and the development of the right speech centre were accidental, and might either coincide in the same individual, or exist separately.

In the present case, however, there was a good cause, other than hereditary transmission, for the left-handedness. The right arm was congenitally feeble, and twisted somewhat on its axis, so that the child rarely used it. This at first lends some support to the education view, suggesting that the weakness of the right arm left the corresponding brain without the usual stimulus, which conversely was supplied by the much-used left arm to the right brain. On the other hand, the failure of the right arm may have been due to some central lesion which so injured at the same time the left speech centre as to put it entirely *hors de combat*, and throw the whole work of the faculty of speech upon the right side, quite irrespective of the fact that the upper limbs received the greater part of their motor stimuli from that side also. I say, may have been, because any such lesion might be, probably would be, masked by the recent destructive changes in the brain.

I wish I could give more information as to the nature and cause of the congenital distortion of the right arm to which I have referred. Clinically it was masked by the later symptoms, and after death I could see nothing in the left brain that was prior to, or independent of, the embolism.

The last point of interest to which I would allude is the termination by diphtheria. I am not prepared to suggest that it had anything to do with the scarlatina which preceded it. On the other hand, I should be inclined to think, from its late appearance, that it was really independent of that disease. But in our present uncertainty as to the specific nature of diphtheria, the sequence of events is worthy of note.

XVII.—*A Case of Pneumonia, with remarks on the Physical Signs of the disease.* By W. J. Tyson, M.B. *Read December* 10, 1880.

THE following case of acute pneumonia illustrates the point in the physical signs of the disease, to which I wish to draw the attention of the Society, viz., the lateness of the appearance of dulness on percussion, bronchial breathing, and bronchophony, which I believe to occur in a fair proportion of cases.

John B., æt. 63. On Sunday, April 4, 1880, he, on a cold day, drove in an open cart the distance of forty miles. During this drive he felt a distinct fit of shivering. The next day he was obliged to give up his work at noon, and remained indoors the rest of the day. Tuesday and Wednesday he was very weak and ill. On Thursday, at 1 P.M., I saw him for the first time. His temperature was 103°, the pulse 108, and respirations 30. He complained of pain in his chest, but in no definite position. His chest was carefully examined, but no abnormal signs were detected. He was expectorating a little tenacious mucus. His urine was albuminous. Friday and Saturday he was getting weaker, and his temperature varied between 102° and 103°. On Sunday there was very slight dulness in the middle third of right lung behind, with slight bronchial breathing. On Monday, the 12th, being eight days after the chill, there was well-marked dulness, bronchial breathing and bronchophony. On Tuesday the dulness had increased in extent, and moist crepitations were heard with inspiration and expiration. The chest was not again critically examined on account of the feebleness of the patient. He died Thursday, the 15th.

The first time these lately developed signs were noticed by me was in the case of a woman æt. 25, who was admitted into Guy's Hospital, under Dr. Pye-Smith, on August 3, 1876. She was ill for three days before her coming in. On admission her temperature was 104°; the only physical sign present was tubular breathing at both apices.

August 4 (morning)	temp. 105°	pulse 156	resp. 46
(evening)	„ 105°	„ 148	„ 52
„ 5 (morning)	„ 103°	„ 128	„ 40
„ 6 „	„ 103·6°	„ 140	„ 46
(evening)	„ 101°		

On this day the right apex was dull on percussion in front and behind, and bronchial breathing was present. No crepitation heard. She was too weak to speak.

August 7 (morning)	temp. 104°	pulse 136	resp. 44
(evening)	„ 104·5°		

She died at 4 P.M. the same day. At the *post mortem*, the right apex was found in a state of grey hepatisation, the middle and lower lobes of the same lung were unaffected. The left lung and other organs were healthy. Here the

dulness did not appear until the sixth day of illness, and she died on the seventh.

Since I have been in private practice other cases with lately discoverable signs have come under my care. One was that of a man æt. 50, in whom dulness and the accompanying signs did not appear for six days after my first seeing him. In 1879 I saw a woman, æt. 60, and also a robust man of 20, in both of whom the only symptoms present for four days were high temperature and quickness of breathing. About this time Dr. Bowles read a paper on asthma at Faversham, before the members of the East Kent District of the British Medical Association, in which he stated that in four cases of pneumonia associated with asthma no dulness was made out until four or five days after the commencement of the attack.

The following paragraph occurs in 'Ziemssen's Medicine':—

'Usually up to the third day after the chill the percussion note over the affected part becomes dull, the respiration of a blowing character; bronchophony now makes its appearance.'

The following is from 'Trousseau's Clinical Medicine':—

'On the second day a dulness, more or less appreciable, reveals itself in the part originally affected, and there are also heard in that situation anomalous sounds which become more and more decided, such as a fine and very equal crepitant râle heard during respiration.'

I have quoted the above two paragraphs as representing the generally acknowledged time as to the appearance of the physical signs of pneumonia. From the observation of cases of croupous pneumonia that I have had the opportunities of seeing, I believe the physical signs, such as dulness on percussion, bronchial breathing, and bronchophony, occur later in the course of the disease than is usually supposed; or perhaps it would be more correct to say that there is a larger percentage of cases with the above lately discoverable signs than our reading or teaching has hitherto led us to suppose. What this percentage is I am not at all prepared to say. The authors who have been quoted say further on in their articles, that the characteristic physical signs of the disease may escape detection from the inflammation being confined to a central situation in the lung. Probably this explanation may sufficiently account for the lateness of the appearance of the aforementioned signs. Yet allowing this explanation to be the true one, it is nevertheless just as

important for the welfare of the patient to diagnose a central pneumonia early, as it is one of peripheral origin; for the one is as dangerous in its prognosis as the other. If this dulness, bronchial breathing, and bronchophony, are not unfrequently lately noticed—for all authors admit that these signs are occasionally either overlooked or lately discovered—then it becomes necessary to diagnose pneumonia in many cases by symptoms instead of by signs. One of the authors before quoted says, referring to pneumonia, that if the patient has had a chill, pain in the side, rusty sputa, and high temperature, there is scarcely any room for doubt, and even in central pneumonia these symptoms are generally present.

In other cases, in which the only symptoms present are high temperature and abnormally quick breathing, the relation of the pulse to the respiration appears to be the most certain diagnostic point in absence of any other affection of the heart and lung. If the respiration is increased relatively in number to the pulse, the case should be treated as one of pneumonia.

XVIII.—*Aphasia. Hemiplegia on the left side. Tumour in the right side of the Brain at the third frontal Convolution.* By S. O. Habershon, M.D. *Read December* 10, 1880.

J. H., æt. 52, was admitted under my care into Guy's Hospital, on October 4, 1880. By trade he was a hat-shaper. His wife had had eleven children; the first died of lung disease: after this, there were three miscarriages; the ninth child had nasal catarrh and skin disease, and died when 2½ years of age; another child died of convulsions, and the living ones have weakness of the chest.

The wife noticed that the patient had symptoms of languor for a year. Seven weeks before admission there was an impediment in his speech, which came on suddenly; when he tried to express himself, he could not speak the right word. This impediment had gradually got worse until three weeks ago, when she found that he was losing strength in his left arm and leg; the leg was observed to drag, and these symptoms increased till admission. He was then found to have

partial hemiplegia, and he could only move the left arm and leg slightly. The heart was normal, pulse 82, respiration 14, temp. 98·2°.

The wife stated that her husband had always been *left-handed.*

The bowels were confined; he passed urine about twice a day, and it was free from albumen. The pupils were sluggish under the action of light; small, especially the right. The ophthalmoscope showed that the retina was hazy, and the examination was put off for the pupil to be dilated with atropia, but as the patient became rapidly worse the eyes were never examined thoroughly.

The bowels were confined, and a purgative was prescribed. Iodide of potassium was given, at first alone, and afterwards with solution of bichloride of mercury.

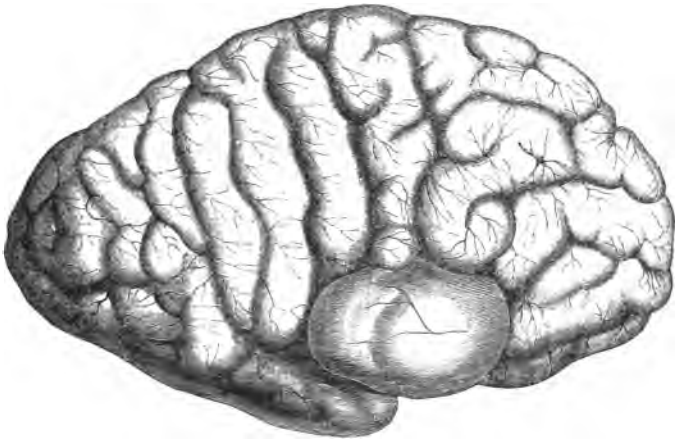
The patient in a day or two became less sensible, and on the 11th was quite unconscious. The motions were passed involuntarily. The left arm and leg were powerless, his face became flushed, and he moved his right arm from side to side. The bichloride was stopped, and the iodide given alone. On the 14th he was again conscious, and appeared to understand questions. The sensibility, however, lessened on the 16th; the left side of the mouth was depressed from slight paralysis on that side, and he became restless, trying to get out of bed. There was dulness at the bases of the lungs, apparently from passive congestion. On the 17th, about 4 A.M., he was violently sick, he became comatose, and died in the evening about 6.30.

Post Mortem Report by Dr. Goodhart.

Head.—Vault of the skull was thin. Vessels of the base were rather atheromatous: both vertebral arteries and the posterior cerebrals were affected, and a few patches were visible in the Sylvian arteries.

The *frontal* region on the right side was rounded and bulging, and the convolutions flattened out, as compared with those on the opposite side. The longitudinal fissure was by this bulging displaced from the median line to the left. On separating the right Sylvian fissure a gelatinous looking, lobulated, and somewhat vascular tumour was seen to occupy the region of the island of Reil—not in its entirety, but rather at its outer part, and bulging upwards so as to involve a great part of the hinder portion of the third frontal

convolution. The tumour consisted of two lobules or rounded masses, and measured an inch or rather more in diameter. The surrounding parts appeared healthy externally, but when the right hemisphere was removed the tumour was found to extend deeply into the white matter of the brain on this side, and to form a mass of two inches or more in diameter. In this way it occupied a considerable part of the vertical thickness of the brain, and laterally spread outwards so as to involve the lenticular nucleus of the corpus striatum. The section of the tumour was not unlike the section of red softening—it had an orange tint with numerous ecchymoses, but on close inspection it was seen to be firmer than mere softening, and, moreover, had at its margin some yellowish



Right cerebral hemisphere, showing the tumour *in situ*.

gelatinous material, some points of caseating material, and some points of firm red induration spread into the brain-matter beyond it.

Under the microscope the tumour was composed almost entirely of small round lymph-like corpuscles, and was undergoing extensive degenerative changes in many places, so much so that nothing but compound granulation masses could be seen in many parts.

Lungs.—Broncho-pneumonia at both bases.

Heart.—Excess of fat externally; weight, about 12 oz. Water regurgitated freely through the mitral, and the valve was rather thick, but not small; there was much atheroma at its base running up into the aortic valves, and the aorta

was excessively diseased above the valves, being both atheromatous and calcareous.

Stomach.—Mammillated, and with the scar of an ulcer of some extent on the hinder wall at the lesser curvature.

Kidneys.—Rather granular.

Remarks.—The onset of disease in this case was gradual, and the symptoms pointed to tumour or softening rather than to apoplectic effusion. A sense of languor was followed by aphasia, and then by paralysis on the left side. The progress of the disease was marked by increased symptoms of weakness, both of speech and strength in this side, then by loss of sensibility and coma. The aphasia led to the consideration of disease of the third frontal convolution, according to the researches of M. Broca and others; but in these cases the organic change in the brain-substance has been on the left side of the brain, with paralysis on the right side. Reference being made to the theory of the unilateral action of the brain, with the greater use of the right hand, and consequent connection of the tongue, the wife of the patient, who was standing near, at once told the clinical clerk that her husband was a *left-handed man.* Thus, this apparently exceptional case tended to confirm the theoretic connection of the use of the arm with the power of speech.

The account that the wife gave of her miscarriages, and the fact that one child had symptoms of nasal catarrh and skin disease, led me to think that there was possibly syphilitic taint, and that the malady consisted in syphilitic growth and degenerative change. The post-mortem examination did not confirm the opinion of the syphilitic character of the disease, but showed that a gliomatous tumour had formed at the position where it was supposed disease existed—namely, at the third frontal convolution on the *right* side.

XIX.—*A Case of Villous Growth of the Bladder successfully removed by Perineal Incision.* By J. N. C. Davies-Colley, M.C. *Read December* 10, 1880.

HENRY W., æt. 32, a shipwright, was admitted into Guy's Hospital, under Dr. Habershon, on March 31, 1880, and afterwards transferred to my care.

For eight years he had suffered from hæmaturia, which he attributed to a severe fall upon the nates about a year before he first noticed blood in his urine. Occasionally the stream suddenly stopped, and after a straining effort a clot of blood came away. He had been repeatedly sounded for stone without success. One medical man told him that the blood was from the kidney; another that he had ulcers of the neck of the bladder.

The latter appears to have applied caustic to the prostatic part of the urethra with success, for a respite of six months followed this treatment. The bleeding had gradually increased in quantity, and the patient had become so weak with it, that for sixteen months he had done no work at all. Eight or nine months before his admission he passed a mass which looked part of it like blood, and part of it 'white and streaky, like the inside of a bird.' His doctor said that it was discoloured blood.

His family history was good. He was himself strongly built and well nourished; but his face had a sallow, waxy appearance, and he always felt weak, nervous, and languid.

He suffered from a constant desire to make water, and had to get up five or six times during the night for that purpose. He always felt as if some urine remained in his bladder. Sometimes the blood came before the water; at other times after. If he strained in passing his motions, blood was especially liable to flow from the urethra. His urine was frequently examined, but nothing abnormal was found in it except blood corpuscles. I could not detect a stone with the sound, nor could I succeed in entangling any part of a villous growth in the eye of a silver catheter. On examining the rectum I could feel nothing abnormal, but when I pressed upon the tissues which lie immediately beneath the uvula vesicæ, he complained of pain.

Although the quiet life he led in our wards had much diminished the loss of blood, he was very anxious to have

something done, as he was sure that the flow would return when he went back to his work. Mr. Bryant, who saw him, agreed with me in the probability of a tumour in the bladder, and the desirability of an exploratory operation.

Accordingly, on April 16, he was placed under the influence of ether, and after the introduction of a straight staff, I opened the bladder by the usual incision for lateral lithotomy. On inserting my finger I could at first feel nothing but the soft folds of the mucous membrane. Then I made out a slight projection on the left side of the fundus, and on further examination a cord-like process running from it. An attempt to seize this with a long forceps was unsuccessful, but as I was withdrawing my finger a soft villous mass followed it, and could readily be seen at the bottom of the wound. I laid hold of this with a forceps, and tried by twisting it round the instrument to drag the growth away. As it resisted firmly, I cut off that part which projected from the wound with a pair of scissors, and again laid hold of the cord-like pedicle. It was too tough to give way, so I drew it out as far as I could and then cut through its attachment close to the wall of the bladder by means of scissors introduced into the bottom of the wound. There was but little bleeding. Some small detached villous masses came away when I washed out the bladder with a syringe and some warm water, but I could feel no more growths upon its wall. Some hæmorrhage came on in the evening, but it was readily arrested by the injection of iced water into the bladder. The subsequent progress of the patient was rapid. Once only his temperature rose as high as 102°. At first all the urine came through the wound. He was, however, able to control the flow, and to retain the urine for about an hour. In seven days about half his urine came through the urethra, and by the 26th (the 10th day from the operation) nearly all came in this way, and he could sleep all night without having to micturate. In a fortnight the urine ceased to escape from the perineum, and soon after the wound was completely healed.

When I saw him last, about two months after the operation, there had been no return of the hæmorrhage; the irritability of the bladder had ceased, and he was in the enjoyment of perfect health.

The tumour consisted of a firm, whitish, cylindrical stalk, $\frac{1}{6}$ inch thick, and about 2 inches long, from which branched off, at and near the free extremity, numerous loosely attached soft

filaments of a pinkish colour from $\frac{1}{2}$ to $\frac{3}{4}$ inch long. These again divided into smaller filaments of a cylindrical shape, which terminated in rounded, but not dilated, extremities. The whole of the growth was rather like a Fallopian tube with its fimbriated extremity, or one of the serpulæ which are to be found in the rock pools at low tide, with a tuft of feathery tentacles protruding from the end of a long cylinder. It grew from a point about three inches from the neck of the bladder, and an inch or rather more to the left of the middle line, upon the posterior wall above and behind the trigone.

On examining one of the villous processes under the microscope I found that it consisted of a narrow central axis with a thick epithelial covering. This axis was in most places rather less than $\frac{1}{1000}$ inch in diameter. It was composed for the most part of structureless membrane which appeared to form or contain a looped capillary vessel. There were small varicose dilatations here and there upon it. The greater part was empty, but a few white blood corpuscles could be seen in its interior. Upon and perpendicular to the axis epithelial cells were set four or five deep. They were mostly of the cylindrical kind, or perhaps I ought rather to call them of a fusiform or battledore shape. Near the free surface they approached the spheroidal or squamous type (*Vide* plate iv. fig. 4).

Remarks.—In the 62nd volume of the 'Medico-Chirurgical Transactions,' Professor Humphry describes the successful removal of a fibrous polypoid growth from the interior of the male bladder, and he mentions one other similar success which occurred in the practice of Professor Billroth. I am not aware that any other cases of the kind are on record. The removal of growths from the female bladder is easier, and has been rather more successful.

In my case the diagnosis of the presence of a tumour was somewhat doubtful. After careful examination I could not find any traces of villous fringes in the urine, and the patient did not tell me about the clot of blood streaked with white, which had passed some time previous to his admission, until after I had operated upon him. It seemed, however, to me, that the long continuance of the hæmorrhage, the absence of any evidence of vesical calculus, of chronic cystitis, or of a tubercular tendency, rendered the presence of a vascular tumour highly probable. Professor Humphry in his paper mentions the fact of a long cessation of hæmorrhage occasionally occurring, as in favour of such a diagnosis. This

was certainly present in my case. Moreover, there was one peculiarity in the symptoms which puzzled me at the time, but which may possibly be of some assistance upon another occasion. The patient used to pass blood sometimes at the beginning and sometimes at the end of micturition. From the character of the growth, I have no doubt that when the blood came with the first flow of the urine it was because the villi had got nipped in the prostatic part of the urethra. When, on the other hand, the bleeding was at the end of micturition, it was in all probability due to the compression of the growth by the muscular walls of the bladder.

I think that if I had washed out the bladder with the apparatus now used for removing the fragments of a crushed stone, I should have brought away some of the easily detached fragments of the growth, and thus rendered the diagnosis more certain before resorting to the operation.

XX.—*A Case of Traumatic Hydronephrosis.* By JOHN CROFT. *Read January* 14, 1881.

GEORGE LAWSON, æt. 12 years, admitted June 3, 1880, under Mr. Croft's care in St. Thomas's Hospital.

On the previous day, whilst jumping over another boy's back, he fell and hurt his left side and loin. This was followed by pain in the side and blood in his water. The pain and hæmaturia continued, and he was therefore brought to the hospital. On admission he was suffering pain in the left loin and far back in the hypochondriac region. There was no swelling in those parts, but tenderness on deep pressure. He had some pain in passing water, and all the water was mixed with blood, which gave it a dark port wine colour.

His mother stated that the boy had previously had fairly good health, and she was quite positive that he had never had any previous illness referable to the bladder or kidneys.

He looked anæmic and delicate, and on his skin were a few scattered patches of bright psoriasis.

He was kept in bed, and an icebag was applied to his side. During the following five days he passed blood in his urine, but there was daily less of it. On the sixth day it had disappeared, and did not recur. The pain gradually diminished. His aspect improved.

On the 14th day, as he seemed convalescent, and as beds were very much wanted for cases of 'urgency,' he was discharged to his own home, which was a comfortable one.

No tumour in his side had been observed up to the time of his leaving.

On July 9, 22 days after he left, and 49 days after the accident, he was brought back by his friends, as he was suffering much discomfort in his side from a swelling, and he seemed very ill. He was at once re-admitted. A considerable swelling was found in the left lumbar and hypochondriac regions; this extended into the epigastric and umbilical regions, reached downwards nearly to the level of the umbilicus, and in the loin it was obvious in the upper half of the space between the ribs and the crest of the ilium. The swelling fluctuated distinctly. The skin over it was free from any redness or discolouration or tenderness. The urine was found to be free from any blood or morbid deposit. Pulse quiet. Temp. below 100°.

After re-admission he became easier. During the next two days he became worse, however. The swelling increased, extending to and beyond the middle line of the epigastrium and below the level of the umbilicus. It also became more prominent. The fluctuation was more distinct than on admission. He became somewhat drowsy. His pupils dilated, and he complained that he could not see clearly. The temperature remained below 100°, or even dropped to below normal. He was passing water freely without effort, and the water which was collected was found to be free from blood and albumen and mucus—14, 18, and 20 ounces were collected during three successive days.

On July 14 his symptoms were as above, and he seemed to be growing worse. I believed the case to be one of hydronephrosis, traumatic in origin. I determined to try the experiment of drawing off the fluid by the aspirator. I passed in the needle a little below and in front of the tip of the eleventh rib, where I could detect fluctuation without difficulty. Seventy nine ounces of urine-coloured fluid were drawn off, and then the walls of the sac collapsed. No blood was observed, and the fluid was clear to the last. It had an acid reaction, and its specific gravity was 1008. A trace of albumen was found by heat. The microscope did not discover any old-blood corpuscles, or crystals or pus in the glass. I am sorry that none of the fluid was ever analysed for urea. No doubt was entertained from the general cha-

racter of the fluid that it was urinous. This operation was followed by immediate relief. In a few hours the drowsiness disappeared and he generally improved.

During the next three days, 25, 20, and 35 ounces of urine were collected on each respective day, on the fourth day, 51 ounces, and on the fifth, 25 ounces.

In eight days' time the swelling had assumed a large size again, and it was therefore tapped, and 38 ounces of the same sort of fluid were drawn off.

During the ensuing nine days the collection reformed rapidly, and then 62 ounces were drawn off. This contained a little albumen, had an acid reaction, and sp. gr. 1005.

Between this time, July 29, and October 15, he was tapped five times, making altogether eight tappings, more than 3 and less than 4 pints being drawn off each time. On the last occasion it was observed that the fluid contained a very large quantity of albumen.

Since that date no farther collection of fluid has taken place. No swelling was found after that, and there is not any now. No constitutional disturbance has occurred since the first tapping. He has considerably improved in health generally, though the psoriasis has gained upon him lately.

The day after the first tapping more water was passed naturally than just before the operation, but no *sudden* changes were found in the amounts passed at any period of his illness, and no morbid products manifested themselves.

With regard to the origin of this morbid collection I have conjectured that at the time of the accident a lesion * of the pelvis of the kidney, before or at its junction with the ureter, took place. That lesion was followed by adhesive inflammation, and as a consequence obliteration of the communication with the ureter. Then the urine collected in the pelvis and distended it, until the condition of hydronephrosis obtained. As the collection never spontaneously subsided in any degree, I am disposed to think there was nothing less than a complete obstruction of the ureter. Had there been any escape for the fluid by the ureter the collection would have formed more slowly, and its progress been marked by temporary subsidences or haltings. I incline to this view rather than to the hypothesis that the kidney itself was the seat of lesion, because the succession of events

* By lesion is *not* meant complete rupture of pelvis or ureter.

was more consistent with obstruction of the excretory *tube* than in disturbance of the excretory *organ.*

The previous history does not include any account of any previous swelling, and therefore the illness for which he was admitted into St. Thomas's cannot be attributed to any congenital cystic growth or disease. The only other possible explanation of the phenomena of the case is that a lesion of kidney or ureter occurred at the time of the accident of which he got quite well, and that he was the subject at that time of a small cyst such as is often seen in kidneys which are otherwise free from abnormalities and morbid changes; that such small cyst was provoked into growth or extension by the changes which ensued in it and its neighbourhood after the injury. This, however, is negatived, I think, by the fact that those are *serous* cysts, and that their contents and the contents which I drew off are dissimilar. Such cysts contain clear pale fluid, free from albumen.

I imagine that the cure has come about by the atrophy of the left kidney, and the obliteration of the cavity. I believe the cure to be permanent.

The only case which I can find at all similar to this is one narrated by Mr. Stanley in the 'Med. Chir. Soc. Transactions' for the year 1844. In Mr. Stanley's case a boy received, besides an internal injury in the right side, a severe injury to the integuments and soft parts of the pelvis. After the boy had been under treatment for six weeks a large swelling was found in the right side. No symptoms of drowsiness or uræmia were observed. A trochar and canula were passed into the swelling, and upwards of 50 ounces of urinous fluid were drawn off. At intervals, varying from 11 days to 3 months, the tapping was repeated. On each occasion, a large quantity of the same kind of fluid was obtained. At the last tapping Mr. Stanley succeeded in taking away only 6 ounces. After this the tumour very slowly diminished, and at the end of 9 months the patient left the hospital. At that time there was still a swelling, and that swelling fluctuated. The subsequent history is not given.

I do not quote Mr. Stanley's second case, because I look upon it as an instance of retro-peritoneal extravasation of urine from laceration of the kidney. It happened in a woman who died from the consequences in nine weeks.

The treatment of this case by repeated tappings by means of the aspirator proved so successful, that I think for

that reason alone the case is worthy of being brought before this Society, and for the interest attaching to the clinical part of the case, I have thought it might prove of special interest to some of the members.

August, 1881.—The boy remains in a 'cured' condition. No relapse has occurred. No symptoms of 'stone' have shown themselves. Psoriasis nearly well.

XXI.—*Report of Case of Myxœdema.* By R. H. Lloyd, M.D. *Read January* 14, 1881.

HANNAH WALL, 35, unmarried, a servant, has, up to within the past five years, enjoyed good health. Had measles as a child, and was re-vaccinated about four years ago with success. Menses regular, but suffers from leucorrhœa at times.

The family history is as follows: Father died at the age of 59 from dropsy and heart disease.

The mother, æt. 70, is now living, but is a great sufferer from rheumatismal pains about the body, and is also nearly blind.

The brother, æt. 39, enjoys good health.

The sister, æt. 37, is married, and enjoys good health, as well as her seven children; but she has had several miscarriages.

About five years ago H. W. began to feel pains in the calves of both her legs, of so severe a character, that she had to catch hold of any object near her; and after sitting down she felt a great difficulty in getting up again. All her movements became very slow, and about that time she felt pains in her head. Her appetite was bad, and, as she describes it, she felt too big for the chair she was sitting in.

About four years ago her mistress noticed the swelling under and over her left eye, which the patient had not noticed herself. She obtained medical advice, but no opinion was expressed as to the nature of the swelling. The patient states that its condition is the same now as then.

About three years ago she noticed a weakness in her neck, causing her head to bend forward suddenly, having at the same time severe pains at the nape of the neck. About this time she noticed that her voice was much rougher than it used to be, and that her memory was impaired.

Present condition.—The patient has a peculiar expression-

less, listless look, and the whole face appears swollen. There is puffiness of the upper and lower eyelids, and the whole nose appears enlarged and red. The skin has a translucent or œdematous appearance, and the superficial vessels are much dilated in some spots about the face. The skin is further very dry and rough, particularly about the arms, and the hair of the scalp is dry, harsh, and scanty. She never perspires.

When the patient speaks there is a peculiar slowness and thickness in her speech, and the intonation is nasal. All expression seems to be much obliterated from her face, especially about the mouth, which almost resembles a slit.

The patient is apt to become very low spirited at the menstrual period, but tries to shake off such feelings by hard work.

The specific gravity of the urine is 1025, and it contains some albumen.

On two occasions within the past eighteen months the patient has suffered from delusions, but these disappeared in a few days.

In other respects the patient's health is good.

Dr. Ord kindly saw this patient with me.

Report of post-mortem examination on a case of Myxœdema.

Hannah Collins, 65, a laundress, was admitted in September, 1879, and presented the dry harsh skin, scanty hair, peculiar translucent œdema, and other symptoms of myxœdema, and died in May, 1880. These symptoms were, to a certain extent, masked by those of ascites, which she suffered from for a period before her death, which took place on May 31, 1880.

The body was emaciated, the lower extremities swollen, but there was no marked pitting except in the left leg.

The skin over the belly was tense and shiny, with a tendency to desquamation of the cuticle.

There were purpuric patches on the dorsum of the forearms.

The skin of face was somewhat shiny and translucent, and the superficial vessels of the face were still somewhat distended.

The hair of the scalp was dry, harsh, and scanty.

There were slight signs of post-mortem decomposition.

The subcutaneous fat was yellow in character, and very moist, but did not collapse.

Abdomen.—The peritoneal cavity contained 240 oz. of clear brownish-yellow fluid, and there were ecchymoses everywhere.

The great omentum was glued to the parietal layer of the peritoneum. The kidneys were in a state of cirrhosis.

Chest.—There were a few old adhesions in the left pleura, and it contained also about a pint of clear fluid.

The right pleura contained about the same quantity of fluid, but there were no adhesions.

The pericardium contained about half a pint of perfectly clear yellow serum.

In the heart the left ventricle was much hypertrophied, and the mitral and aortic valves were thickened, but there was no regurgitation.

Skull.—The dura mater was firmly adherent to the bone. There was much atheroma about the vessels at the base of the brain. There was much flattening of the convolutions at the vertex, and much apparent atrophy, especially of the right hemisphere. The ventricles presented no abnormal appearance.

Dr. Ord saw this case during life.

WEIGHT OF THE SEVERAL ORGANS.

	oz.
Brain	34
Right Lung	15
Left Lung	11½
Liver	33½
Heart	15
Spleen	2¾
Kidneys (both)	5½

XXII.—*A Case of Chronic Vomiting in which no food was taken, except Koumiss, for sixteen months.* By H. SUTHERLAND, M.D. *Read February* 11, 1881.

THE patient, a girl, æt. 24, had been for five years under my care at St. George's (Hanover Square) Dispensary. One year and seven months ago vomiting commenced. The attack came on at first only once a fortnight; but lately it occurred always once, and sometimes five or six times, a day. As far as could be ascertained, there was no organic disease of the stomach; no tender-

ness on pressure, cachexia, nor any other constitutional symptoms. Every known remedy was tried to allay the vomiting—bismuth, opium, hydrocyanic acid, creasote, carbolic acid, hyposulphites, &c.—without any satisfactory result.

All attempts to cure the case by dieting had failed, and the patient could keep nothing on the stomach as food, except koumiss, which she took for sixteen months. She was, however, able to retain a quinine and orange mixture, and also sherry, in small quantities, but brandy made her sick immediately.

The uterus was not displaced, but the catamenia were irregular.

The patient was possessed of a peculiarly matter-of-fact disposition, and there were no hysterical symptoms observed at any period of the disease. At home she was considered to be a person of exceedingly bad temper, and she occasionally became much depressed, suicidal tendencies being at times developed.

The object of bringing the case before the Society was to elicit, if possible, any suggestions as to the medical or dietetic treatment of the patient's distressing symptoms.

XXIII.—*A Case of Gangrene of the Arm from a poisoned wound. Amputation at the shoulder, and recovery.* By CHRISTOPHER HEATH. *Read February* 11, 1881.

THE following is a remarkable instance of gangrene of the arm occasioned in the person of a healthy nurse, æt. 34, as a consequence of a prick of the finger received in laying out the body of a lady who died of puerperal fever. For the notes of the puerperal patient's case I am indebted to Dr. Playfair, who attended her; and for the report of the nurse's case to Mr. Boyd, the surgical registrar of University College Hospital.

'The Hon. Mrs. R. was confined of her first child on Friday, October 8, after an exceedingly easy labour of a few hours only. She did perfectly well until Tuesday, the 12th —4th day after labour, when she had a violent rigor. When I saw her after this her temperature was 105°, pulse 120. There was no abdominal pain or tenderness. The lochia

were normal and not offensive, nor did they become so at any subsequent period of the disease. The case rapidly developed into a marked example of what, perhaps, may best be called "Puerperal Pyæmia," since it was characterised by joint swellings, and on the day preceding death, which occurred on the 8th day from her initial rigor, by the formation of a tender swelling in the left thigh, which, I have little doubt, would have developed into an abscess had the patient survived. Abdominal and uterine complications were absent. The most prominent symptoms were frequent rigors. There was marked hyperpyrexia; the temperature, where unaffected by antipyretics, ranging from 105° to 107° and 108°. Pulse 120–130. No delirium.

'The treatment adopted was: at first, washing out the uterine cavity frequently with antiseptics, and various methods of reducing temperature, such as salicylate of soda, quinine in dose of 20 grs., Warburg's tincture, &c. Food and stimulants were taken freely. After the hyperpyrexial temperatures were developed, cold externally was used, in the form of Thornton's ice-caps and a water-bed through which a constant current of iced water was run. The patient was gently lifted on to this until the temperature fell to 102°, when she was removed to her own bed. By these means the temperature was kept down very satisfactorily, and fair hopes were entertained of recovery until the 7th day of her illness, when the left pleura rapidly filled with fluid, after which the patient sank.

'As to the origin of this attack, I may remark that this chanced to be the first midwifery case I had attended since my return from my holiday, so that I could not possibly have conveyed septic matter from another case, and I happened by a curious coincidence to attend two other cases within the same day, neither of which had a bad symptom. I had no reason to think that the nurse had been brought into contact with any septic matter. Moreover, I had a large bowl of 1 in 20 solution of carbolic acid by the bedside, in which my own hands and those of the nurse were washed before the patient was touched—a precaution I now always adopt in my midwifery practice. Carbolised oil, 1 in 8, was used for lubricating the fingers; and all sponges, &c., were washed in carbolic solution.

'Nor do I think the disease was *Autogenetic* from decomposing coagula, &c., since the lochia never showed the slightest fetor.

'The only probable cause of the disease I could trace was the condition of the sanitary arrangements of the house in the country in which the patient had resided immediately before her confinement, and which had produced diarrhœa and sore throat in several of her servants. This, however, is of course mere conjecture.'

One of the nurses in attendance on the patient pricked her left middle finger, on or about October 12—the day of the initial rigor. Mr. Milles, surgical-registrar at King's College Hospital, states that she was admitted to that institution on October 16, with intense inflammation of the arm, which had spread from a prick on the middle finger. There were two ulcerated circles on the finger and one round the wrist from the application of nitrate of silver. The point of inoculation was not worse than the rest of the arm. The axillary glands were swollen and fever high. The patient was practically well in four days—fomentations, quinine, and brandy having been used.

On October 16, M. R., æt. 34, and in good health, commenced attendance on Mrs. R., and remained with her until her death, on October 19, at 9.15 A.M. Whilst washing the body, between 10 A.M. and 11 A.M., she pricked her thumb deeply with a common pin in some of the clothes. The point entered in the flexor fold of the interphalangeal joint. In the afternoon this joint swelled and became painful, and these symptoms rapidly increased. She applied a poultice to the thumb at 8 P.M., and before going to bed she rubbed the wound with nitrate of silver, took two purgative pills, and wrapped the hand in a poultice.

On the 2nd day, October 20, the thumb was more swollen, and swelling had spread to the hand and fingers. Pain was increasing. She took a Seidlitz powder and kept on with the poultices until evening. She then wrapped the part in carbolised wool and walked to King's College Hospital. She was ordered to apply cold water dressings to the thumb. During the whole of this day there were symptoms of considerable fever. By night swelling had extended halfway up the forearm, and the part was burning hot. There was sharp pain across the loins, and patient had frequent chills but no actual rigor. Pain in the arm prevented all sleep.

On the 3rd day, October 21, swelling extended above the elbow in the morning, and fever was high. Pain was relieved by some medicine and hot fomentations. Towards evening the swelling went down considerably, and she felt

much better. In the night suffering again became acute, and the elbow was so stiff that she could not move it. She was very restless and had no sleep.

On the 4th day, October 22, she was able to get up, light a fire, and boil water to foment her arm. Pain and swelling increased during the day, and in the evening Mr. Heath found the whole upper limb swollen from her fingers to the upper third of the arm; the fingers were numb, and purple discoloration was beginning on the dorsum of the hand. He had the patient conveyed at once to University College Hospital, and made several incisions into the limb soon after her arrival there. Three were upon the dorsum of the hand, others on the forearm, and one above the inner condyle of the humerus. Nothing but bloody serum escaped. The arm was then painted with glycerine and belladonna, and wrapped in a poultice; and a local warm carbolised bath was given several times.

On the 5th day, October 23, the left hand and fingers were slightly swollen and of a slate-blue colour. Above the wrist on the palmar aspect, some large bullæ had risen, and the cuticle was separating, leaving the exposed cutis covered with small ecchymoses for 2 inches above the wrist. These extravasations were continuous over the ulna with others on the back of the forearm not extending quite so high. The upper line of gangrene could not be at all defined. The prick on the thumb was plainly visible.

The forearm and arm were greatly swollen—especially the latter; the swelling reaching almost to the axilla on the inner side, and to the lower part of the deltoid on the outer. The skin was very tense, slightly red on the forearm and over the brachial vessels, whilst on the outer side of the arm it had a dusky-brown, singed look. Small bullæ with reddish contents had risen in the fold of the elbow. Sensation was lost in the hand and much diminished in the forearm, but slight motion was communicated to the fingers by the long flexors.

There were no enlarged or tender glands in the axilla.

The patient was very weak. Temperature, 102·4°–103·4°. Pulse, 152, very small and compressible. Respiration, 28. Tongue, foul. Bowels, confined for three days. Conjunctivæ, distinctly jaundiced.

Treatment as before. Patient slept fairly after morphia.

On the 6th day, October 24, the arm was less swollen, redness over brachial vessels about the same. Gangrene had spread

little, the ecchymoses had run together, and their upper boundary was now a sharp line, highest over ulna, lowest over radius. Solid and liquid food were taken well. Temperature, 102°. It was hoped that the gangrene had become limited, and that amputation through the forearm would be possible.

In the afternoon, however, the patient became rather suddenly worse. Temperature rose to 103·8°. Pulse, 140, very weak. In a few hours the arm became more swollen, and the red blush extended from its inner to its outer side. The line of gangrene spread up along the ulnar border of forearm, and a tough layer of lymph covered the edges of the incisions.

At 6 P.M., ether having been given, the limb was removed at the shoulder joint, a long outer flap being cut by dissection, the bone disarticulated, and a very short inner flap cut from within outwards. The vessels were secured with catgut, free drainage provided, and antiseptic dressings applied. The amputation was done quickly, and but little blood was lost.

The pulse became very rapid and weak during the operation, and great shock continued until 9 P.M., when the general state began to improve. Stimulants were given freely and frequently during the night.

On the following morning, October 25, the patient was looking decidedly better. Pulse 100, moderately full, but compressible. The temperature fell to 99° after the operation, but at 2 P.M. to-day it rose to 102°, its highest point after the amputation. The dressings were offensive, but bacteria were not recognised in the discharge, with certainty, until the third dressing, when they were plain and numerous. Antiseptics were continued until the 20th day, and during the whole of this time the progress of the stump was most satisfactory. A slight blush, not spreading from the wound, appeared in the outer flap, and was probably caused by irritation of carbolic acid. It caused no rise of temperature. On the 3rd and 4th days temperature varied between 100·2° and 101·8°. After this till 15th day it was normal, or almost so, in the morning—100° or a little over in the evening.

On the 29th day the patient was sent to Eastbourne with the stump all but healed.

State of Arm.—The areolar tissue as high as the middle of the arm contained a large quantity of reddish serum, but round the brachial vessels a thin puriform fluid extended

to 1 inch from amputation surface, and along the musculo-spiral nerve a similar fluid ran to within ½ inch of the surface of section. The muscles of front of forearm were soft and ecchymosed up to their origin. None of the main vessels were plugged. There was no emphysema of the limb.

Remarks.—The virulence of the poison developed in the course of puerperal septicæmia is shown in the fact that both the original patient's nurses suffered, one from acute lymphatic inflammation, and the other from gangrene. Although after the patient came under my care every possible antiseptic precaution was taken, another nurse who attended her got lymphatic inflammation ending in axillary abscess of a serious character.

The occurrence of gangrene as a consequence of a poisoned wound must be very rare. It is not mentioned by the leading authorities, and several eminent surgeons whom I have interrogated have not seen a case. In Lawrence's 'Lectures on Surgery' (p. 276), the case is recorded of a physician who died from a post-mortem wound received in examining a case of puerperal peritonitis, and in whom two phalanges of the finger mortified; but it is observed 'there is room for doubt in this case whether the fatal event was owing to the original puncture or to the very energetic escharotic treatment resorted to.'

It will be observed that my patient applied nitrate of silver freely to the thumb on the evening after the puncture was received, and that when she applied at King's College Hospital on the following day it was difficult to say how much of the inflammation was due to this. From that date she had no medical advice till the 4th day, when I saw her, and at once made free incisions, giving exit to bloody serum, but to no pus. The gangrene which showed itself on the day after admission, although of the moist, rapidly spreading kind, seemed inclined for some hours to limit itself to the forearm, but the recrudescence which took place warned me to amputate at the shoulder whilst a fairly healthy flap of deltoid could be obtained. The axilla was already so infiltrated that I was obliged to cut the inner flap with the vessels and nerves very short, but having the subclavian thoroughly compressed above the clavicle and the vessels grasped by an assistant before they were divided, very little blood was lost.

As possibly giving the patient an extra chance of recovery, I used the antiseptic method of dressing, and may remark

that though the dressings were never absolutely sweet, the temperature kept low and the patient made a rapid recovery.

As regards the treatment of a poisoned wound, I would enter a protest against the immediate cauterisation of a puncture by nitrate of silver as being absolutely useless and very often harmful. The case already referred to in Lawrence's Lectures is a good example of the bad effects of escharotics, and any one who has tried on his own person, as I have, the liberal application of nitrate of silver to a poisoned wound, will not easily forget the agony produced. The drug which undoubtedly produces the most marked effect on lymphatic or deep-seated localised inflammations is belladonna, which should be freely applied with glycerine, either alone or beneath a poultice. Free and early incisions to relieve tension are, of course, essential, and if resorted to earlier in the foregoing case might have saved the arm; but probably few patients now-a-days would bear the energetic treatment narrated by Lawrence in the case of a surgeon, who first lost thirty ounces of blood from an incision made into the thumb, and then had leeches applied to the forearm, which were 'put on by handfuls, without counting.'

XXIV.—*Small round-celled Sarcoma of the Dura Mater, encroaching on the left Temporo-sphenoidal lobe of the Brain, and producing extensive softening in its neighbourhood: absence of Aphasia, the patient being left-handed.* By THOMAS WHIPHAM, M.B. *Read February* 11, 1881.

WILLIAM BISHOP, æt. 35, railway goods-guard, was admitted into St. George's Hospital under my care on January 25, 1880. His father died from 'injuring his lungs by singing' (? phthisis); his mother of an 'enlarged throat.'

The patient in former years served on board a merchant ship as an apprentice; and when in China, Japan and India had several attacks of ague—*i.e.* within the last eleven years. The last attack occurred in Queensland nine years ago. He had also suffered from dysentery, and so far as could be gathered from his history of himself, had once an attack of cholera while in the tropics. In 1870–71 he was

laid up in Calcutta by some ailment, the nature of which is doubtful. While in Queensland (nine years ago) he had a severe attack of rheumatism.

Twelve years ago he had a sore on the penis, but had never any symptoms of secondary syphilis.

He had been liable to 'bad colds,' but was never laid up by them for more than a day or so at a time.

Fourteen months ago he had an attack of pain in the chest, flatulence and palpitation. With this single exception his digestion had been sound.

About December 30, 1879, he caught cold, shivered, and had pain in the chest; and was for a day or two short of breath, but had no cough.

For eleven days subsequently he continued his occupation, by which, as he was on night duty, he was necessarily much exposed to weather.

For the past fortnight he had been laid up at home, in consequence of severe headache over both brows.

Further examination of the patient, who was dull and somewhat stupid, elicited the facts that about thirteen days previously to his admission he became afflicted with a general feeling of lassitude and malaise. On the following day he shivered, and felt pain in the left frontal and temporal regions especially, at the same time he became constipated. From that date the pain increased, and recurred in paroxysms, which became more severe and more frequent up to the time of his admission. He had received no injury. The headache remitted for short periods, and during these periods he was absolutely free from pain.

He was a fair-haired man, with light complexion, somewhat thin, but by no means emaciated, and on admission his skin was cool and moist; his eyes suffused, with some injection of the conjunctivæ, especially of the left. He talked with slight nasal twang. His intellect was dull, and Mr. Griffiths, my house physician, aptly remarked that in all probability this stupidity was a departure from his normal condition, seeing that he was employed as a railway guard, an occupation which requires a man to have his wits about him. His tongue was moist, and coated with a thick fur; the bowels were well open; pulse 72, small; resp. 18; no cough; urine natural. He complained of pain in the loins, but there was no tenderness. He had a severe headache, and said that he felt 'stuffy in the head.' There was no paralysis.

Examination of the chest and abdomen was in all respects satisfactory.

He was a left-handed man.

January 26.—The patient complained of a dull, heavy pain in the left temporal region and in the left eye. There was a purulent discharge from the right ear, which had existed uninterruptedly for eleven years. During my examination of the patient the pain in the head suddenly ceased, and he expressed himself as being quite comfortable. The pain, however, returned in a few moments, and a piece of menthol was rubbed over the seat of pain for a few seconds; immediate relief was the result. On a recurrence of the pain in the afternoon a like cessation of pain followed a repetition of the application of menthol, and he slept for some time.

The pulse was 88, weak and compressible. Temperature normal. He was ordered a purge of calomel, followed by a senna draught; and his diet was beef-tea and milk.

27.—The menthol was used once or twice during the 24 hours, and each time the headache ceased in three or four minutes. Bowels well open. Temp. 98.

28.—Light diet. Pain still relieved by menthol.

29.—He was somewhat improved. Tongue nearly clean; bowels freely open.

February 3.—Mr. Dalby reported a large perforation of the right tympanic membrane, and total deafness of the ear; the ear to be syringed with a teaspoonful of rectified spirit in one-third of a tumbler of warm water. The pain was at this date referred to the left temporal and frontal regions.

4.—He was ordered a mixture containing five grains of quinine three times a day. He now became very restless and troublesome at night, but was quiet and rational during the day. On February 7 an addition of two grains of quinine was made to each dose of the mixture.

On February 8 and 9 the delirium increased, and he had lost power over the sphincters. As the menthol now appeared to have no effect in controlling the pain, its application was discontinued.

10.—He was in a partially comatose state; could be roused, but soon relapsed into his previous condition. It was with considerable difficulty that he could be made to comprehend and answer questions. As far as could be made out he was at this time free from pain. His appetite was fairly good; tongue slightly coated; bowels open.

The treatment was altered to biniodide of mercury, and five ounces of port wine were ordered daily.

11.—Very heavy and sleepy. Complained of severe pain in the head on awaking. No involuntary evacuation of the contents of the bladder and rectum. No paralysis. Pulse feeble.

14.—Very drowsy; was roused with much difficulty. Said that he suffered no pain, but did not appear to understand what was going on, and his answers to questions were somewhat incoherent. Pulse slow and weak. Pupils equal; act normally.

23.—The patient had become more and more drowsy, passing urine and fæces occasionally unconsciously. His mental condition was as follows: When first spoken to he appeared to understand questions addressed to him, and to answer them correctly; but after one or two questions his power of comprehension failed, and no answer could be obtained. He denied any sensation of pain or discomfort, but his manner of placing his hands on his head was indicative of pain on the left side. Urine and fæces as a rule passed in bed; though there were exceptions to this, showing that he still retained some power over the sphincters.

The pupils at this date were dilated and sluggish; muscular twitching was observed, and was increased by a touch or a pinch. Tache cérébrale was easily obtained. It was noticed that there was some slight loss of power in the right arm, and that the grasp of the right hand was not so firm as that of the left; otherwise no paralysis could be detected.

24.—Last night the patient was very noisy in his delirium. But when seen at midday was in a state of stupor, from which it was impossible to rouse him. Up to this time his attention could always be attracted by questions spoken in a loud sharp tone, moreover a reply more or less coherent could up to this date be obtained. His face was dusky and he made constantly restless movement, rolling his body from side to side, and kicking his legs, as if in pain. His hands were never still for a moment; motion of the left arm being freer than that of the right. He lay with his face turned to the left; this attitude was observed to be constant with him for two or three days past; if turned on to his right side he invariably rolled over again on to his left. There appeared to be partial loss of power in the right arm, which when raised and let fall by a bystander, fell more helplessly

than the left. He invariably used the left hand to remove any source of irritation from the face or elsewhere. The right leg was apparently partially paralysed, and seemed also wanting in sensation. These observations as to loss of power, &c., could not be exactly verified by reason of the condition of the patient. The abdomen had latterly become markedly navicular. There was no vomiting during the time the patient was under observation. The patient died quietly at 7.40 P.M.

Examination 18 *hours after death, from Dr. I. Owen's Notes.*

Encephalon.—The dura mater was abnormally thick; congested and studded with ecchymoses.

The surface of the brain was greatly flattened; its substance (except in the parts subsequently described) was firm; the puncta vasculosa were not unusually conspicuous.

On cutting horizontally down to the level of the corpora striata (from above downwards) both lateral ventricles were found to have been pushed to the right of the median line; the left being compressed laterally, the right distended with clear colourless fluid.

An incision $\frac{1}{10}$in. deep, made from before backwards into the white matter of the left hemisphere at about the level of the upper surface of the corpus striatum was followed by an outflow of pinkish, turbid fluid, which was contained in an irregularly-shaped cavity with soft walls, situated in the white matter of this left hemisphere.

On raising the brain from the fossæ a lobulated tumour was found attached to the left temporal bone, beneath the above-mentioned cavity in the brain. It was attached also firmly below to the dura mater of the middle fossa. The bone at this spot was, in parts, rough.

The morbid growth extended upwards into the substance of the left spheno-temporal lobe of the brain, and produced softening, to the extent indicated in the drawings opposite.

They are exact tracings, made for me by Mr. Francis Compton from Dr. Isambard Owen's drawings, which were executed at the time of the dissection of the brain. The deep shading shows the extent appearing on the surface, and the lighter shading in fig. 1 that which lay below concealed by brain substance.

The following parts were involved in the softening :—

1. The surface of the anterior third of the inferior temporo-sphenoidal gyrus; beneath the grey matter the softening extended as far as the junction of the middle with the posterior third of this convolution.

2. The whole extent of the anterior half of the deep parts of the middle temporo-sphenoidal gyrus—*i.e.* the external surface, to the depth of a quarter of an inch, had escaped.

Fig. 1.

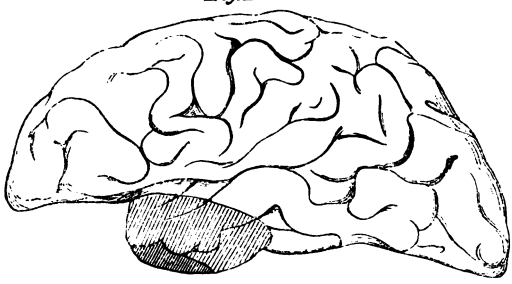


Fig. 2.

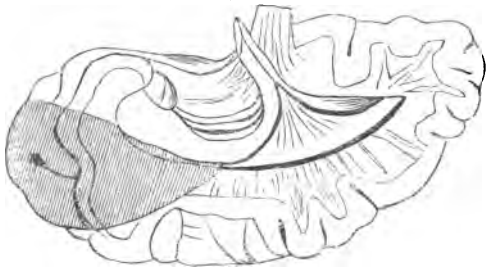


FIG. 1.—Outer surface of the left half of the brain.

FIG. 2.—Horizontal section of the spheno-temporal lobe, showing the descending cornu.

3. The deeper parts of the whole of the anterior $\frac{1}{6}$ of the superior temporo-sphenoidal gyrus. The softening extended as far backwards as the termination of the anterior half of the lower part of this convolution; the external surface of the grey matter to the depth of about a quarter of an inch being apparently quite natural. This is shown in fig. 1.

4. Portions of the tumour and softened brain-tissue appeared on the under suface of the middle lobe, as a round patch about $1\frac{1}{2}$ inch in either diameter. This patch was

in contact with the tumour. The softening extended backwards, and involved the anterior third of the middle lobe; but again, with the exception of the round patch just mentioned, the softening only extended to a quarter of an inch from the surface of the grey matter.

5. An extensive patch of softening of somewhat triangular shape with the apex backwards, terminated at the commencement of the descending cornu of the left lateral ventricle. (Fig. 2.)

6. The softening extended upwards, involving the whole of the island of Reil, through the centrum ovale to within about $\frac{1}{10}$ inch of the level of the upper surface of the left corpus striatum. Both the corpus striatum and optic thalamus were natural in appearance.

The heart weighed 9 oz. The ventricles were contracted: the tissue and valves healthy.

The liver weighed 3 lb. 4 oz.; spleen, 7 oz.; kidneys, 14 oz.

These organs were slightly congested, but otherwise natural.

The central ganglia of the brain were uninjured, and save by pressure did not appear to be involved in the disease.

When the brain had been hardened in alcohol the morbid growth was separated readily from the brain-tissue surrounding it on the under surface of the left temporo-sphenoidal lobe. It had penetrated into the brain-substance to the depth of about $\frac{3}{4}$ inch.

The lungs were emphysematous: their lower lobes congested. In the right lower lobe was an irregularly shaped tumour (small round-celled sarcoma). The central parts of the growth were in a state of caseous degeneration: externally it was pearly, juicy, and very tough.

The chief interest in the case is its bearing upon the question of the localisation of the functions of the brain.

It will be gathered from the description of the case, and seen by the drawings, that none of the motor centres were directly involved in the disease; but seeing that the tumour must have exerted very considerable upward pressure, the partial paralysis of the right arm and leg may be explained. A glance at the brain will show that the pressure of a tumour, situated as in the present case, would certainly affect the posterior part of the left superior frontal convolution, the upper part of the ascending frontal, and probably part of the superior, or posterior parietal lobule; those

regions, that is to say, which Ferrier and others have shown to preside over the movements of the arm and leg.*

That symptoms accompanying lesions of the other motor areæ, such as the ascending parietal convolution, and the inferior part of the ascending frontal, were absent may possibly be accounted for by the fact that the tumour exerted pressure in an upward rather than in a lateral direction.

Unfortunately, the special senses of smell and taste were not accurately tested while the patient was thoroughly conscious. It may be, however, observed that he made no complaint of any deficiency in one or the other, either in his history of his illness, or during the time he was under observation, and that the lesions found at the autopsy did not involve the centres for those senses. He was quite deaf on the right side, but so far as could be ascertained, the hearing in the left ear was good. At all events, it was not found necessary to raise the voice when addressing him from the left side.

It is stated in the notes that Mr. Dalby found a large perforation of the right tympanic membrane, and total deafness of that ear, and it is a matter of great interest whether this deafness was the result of the perforation of the tympanic membrane, or is to be ascribed to lesion of the auditory centre for the right ear.

In his treatise on 'Diseases of the Ear,' (p. 110, ed. 1873) Mr. Dalby remarks that 'very fair hearing will be found with almost total loss of the membrane. . . . Indeed, the amount of tissue lost has, I have convinced myself, very little to do with the amount of hearing lost. On this point Dr. Adam Politzer says, "the patient hears better, as a rule, when the perforations are of medium size than when they are very small." . . . And Sir W. Wilde says, "I have observed that when once the tympanal membrane has become permanently open, the larger the aperture the greater the amount of hearing, provided that no further mischief has taken place, and that there is a slight ring or circle of membrane still remaining."'

Mr. Dalby reported simply that perforation existed, but

* In some remarks which he made when this paper was read, Dr. Broadbent suggested that the effects of the disease on these centres was through the corona radiata rather than by direct pressure on the centres themselves, an explanation which I am quite willing to accept, seeing how nearly the softening approached that part of the brain.

made no mention of 'further changes.' The probability, therefore, is that deafness was due to some lesion of the auditory centre for the right side. Post-mortem examination, it is true, showed no softening of the posterior part of the upper temporo-sphenoidal convolution on the left side, but the injury to the convolutions in its immediate neighbourhood, and the pressure necessarily exerted by the new growth, may be assumed to have exercised a deleterious effect on the function of this centre.

The absence of aphasia is a noteworthy fact in connection with the case. No actual destruction of Broca's convolution was evident at the post-mortem examination, but still the extensive injury to parts in close proximity, such as the island of Reil, render it probable that, had the patient not been 'left-handed,' functional disturbance of this centre would have rendered him more or less aphasic, much in the same way as he became partially hemiplegic from arrest of function of the centres controlling the arm and leg.

XXV.—*A Case of Paralysis due to Partial Disease of the Nuclei of the Motor Roots of the Fifth Nerves.* By C. Hilton Fagge, M.D. *Read February* 25, 1881.

W. B., æt. 41, was admitted into Guy's Hospital under my care on October 18, 1880, on account of an inability to close the jaws.

He states that he has for twenty-one years been in the Coldstream Guards. About twenty years ago he had gonorrhœa, with a bubo, not followed by sore throat, rash, or nodes. He has been married nineteen years, but his wife has never been pregnant. He once had swelling and suppuration of the cervical glands, and several years back he had pleurisy. Otherwise his health has been good up to the present time.

Three months ago he began to experience difficulty in holding anything tightly between the teeth, and soon afterwards he could not bite his food well. The loss of power gradually increased, until he became altogether unable to bring his teeth together. This began to be the case about three weeks before his admission, and he also had difficulty in swallowing both solids and liquids, the former not passing

readily into the pharynx, and the latter, if drunk in any quantity, returning through the left nostril. The drop of the jaw has since been slowly becoming more marked.

He has never been a great drinker, but he has always smoked very much. His bowels have occasionally been constipated, and he has then had slight diplopia.

He is a strong, healthy looking man, 5 ft. 11¾ in. high, weighing 169 lbs., with fair hair, a ruddy complexion, and grey eyes. His skin is cool and dry. There are scars on either side of the neck and beneath the chin, where glands have suppurated. His ears are healthy. There is no enlargement of any lymphatic glands. The bones and the joints all appear normal. His tongue is pale, dry, and furred. His teeth are good, but much stained. His appetite is good. He has no abnormal thirst.

His expression is somewhat vacant, and his features have lost much of their play. This is not due to any defect of the seventh nerves, for he can whistle a tune perfectly well. It is caused by a separation of the jaws, which gives the lower part of the face a 'dropped' appearance, and deprives it of its natural wrinkles. When he tries to bring the lower and the upper teeth into contact he cannot do it. The temporal muscles then can scarcely be felt to contract, and the masseters move but slightly. Both pairs of muscles are also distinctly wasted. Yet the lateral movements of the lower jaw, performed by the external pterygoid muscles, are unimpaired. On inspection of the fauces the palate is seen to move symmetrically during the act of respiration with open mouth. But the left side of the palatine arch is dropped, and narrower than the right side. He cannot swallow solids or liquids, unless he raises the lower jaw with the hand. He can only take fluids in sips, as a full draught returns through the left nostril. The movements of the tongue are perfect, but his speech is slightly indistinct, probably in consequence of his being unable to bring the jaws together. The cutaneous sensibility of the face is perfect.

The movements of the eyes appear good, but he says there is slight diplopia. The ophthalmoscope shows no pathological changes in the discs.

When tested with the continuous current, the temporals and the masseters contract but slightly; the buccinators and the facial muscles perfectly. There appears to be a diminished capability of reacting to both faradic and continuous currents on the part of the muscles of the arms, and of the

extensor muscles of the forearms. He says that his grasp is not quite so strong as it was, but the flexor muscles of the forearms contract well to both currents.

The thoracic and the abdominal viscera appear all healthy. The urine, however, is saccharine, containing 54·7 grains of sugar to the ounce, and having a specific gravity of 1049. There are cicatrices in each groin.

He was ordered to take one-twelfth of a grain of the perchloride of mercury and ten grains of the iodide of potassium three times a day, and to have the affected muscles galvanised.

Under this treatment he made a marked improvement, and on November 6 he refused to stay longer in the hospital. He could eat and talk better, especially during the early part of the day. The masseter and the temporal muscles appeared to contract more forcibly. The glycosuria continued, the proportion of sugar varying from 26·4 to 47·5 grains in the ounce, and the total amount from 844 to 1944 grains per diem.

Remarks.—This case, of which I have copied the report taken for me by my clinical clerk, Mr. J. W. Nicholson, seems to be one of considerable interest. I think there can be no doubt that there is a lesion of the nuclei of parts of the motor divisions of the two fifth nerves,—affecting, that is, the roots corresponding to each of the masseters and temporals, and to the left levator palati, but not those belonging to either of the external pterygoids. I am not aware of any recorded instance of a similar affection; but it seems to form a natural connecting link between two diseases which are now well recognised, namely, 'bulbar paralysis' and the 'ophthalmoplegia externa' of Mr. Hutchinson. As in the latter disease, syphilis may be suspected to have been the cause. It is to be noted that there are indications that the paralysis was not quite strictly localised, for diplopia is said to have occasionally been noticed by the patient, and some of the arm-muscles contracted imperfectly when stimulated by galvanism. The presence of glycosuria, too, is worthy of attention.

Further note. August 1881.—The patient was readmitted under Dr. Moxon on July 19. He now has paralysis of the palate, ptosis of the right eye, paralysis of the left external rectus, slight loss of power in the ocular muscles supplied by the right third nerve, and weakness of the arms, with atrophy of the deltoid and pectoral muscles. There is also loss of

erectile power. In swallowing, fluids are very apt to 'go the wrong way,' and to choke him. He can now hold a pipe between his teeth, but he still cannot masticate solid food without the assistance of his hand.

XXVI.—*Case of 'Quiescent Scirrhus.'* By JOHN W. TEALE (Scarborough). *Read February* 25, 1881. *Communicated by* F. TAYLOR, M.D.

I PROPOSE to bring before the Society a few notes of a case which has been for several years under my care, and which, I think, presents some points of interest.

Mrs. C., æt. 53, widow of a medical man, tells me that eighteen years ago, during her married life, she had a sharp attack of pain in the left breast, which lasted for a month or so, then disappeared for a time, recurring at intervals. No lump was then noticed, though before this two abscesses had formed, and had been opened in this breast after confinement. Her two children died in childhood, and her only sister died of cancer of the breast; but there is no other instance of this disease in her family to be made out.

Eleven years ago Mrs. C. first noticed a small hard tumour in the left breast, below and to the outer side of the nipple. A hospital surgeon who was consulted advised its removal. Another surgeon, a personal friend, advised that it should be left alone, though I do not gather on what grounds; and as this fell in with her own inclination, she naturally clung to the latter opinion. Mrs. C. has an intense horror of a cutting operation, though she has at the same time heroic fortitude in bearing pain.

About this time, eleven years ago, Mrs. C. came under my care, and has continued so until now. Both the medical men referred to have seen her at intervals. When I first saw her, she was a thin, pale, spare-looking woman, prematurely grey. She had a hard, painful, movable tumour in the left breast, unconnected with the nipple. The skin over the tumour was adherent to it.

I then formed the opinion that it was malignant. I advised its removal, and that it should be done without delay, if at all. All idea of operation was firmly declined.

The tumour slowly but steadily increased in size, and gradually became adherent to the ribs. The nipple then

became involved, retracted, and finally obliterated. Then the surface of the tumour ulcerated, allowing the escape of a sanious, offensive discharge. Pain, which had been moderate and intermittent at first, became more and more constant, and at times excruciating, until the morphia which was given to relieve it, and which was given in the form of the solution of the acetate by the mouth, was increased gradually up to 4 grains daily. The patient became wan and emaciated. She suffered much from sleeplessness, for which chloral was given, at first in 10 or 15 grain doses at bedtime, and ultimately from 50 to 60 grains nightly. The appetite, which had at best been poor, failed completely, animal food and stimulants were loathed, until at last milk only was taken, on which she lived for upwards of two years.

Things went on gradually from bad to worse, until about five years ago, when intense depression having set in, accompanied by morbid nervous fancies, and a puffy, bloated condition of the face, I feared at this time that her mind would give way before her bodily strength was exhausted.

It then occurred to me, and to my patient about the same time, that some of her distressing symptoms might be due to the chloral. I was not then aware, as I am now, of the cumulative and depressing effects of that drug, when taken continuously in large doses. It was at once and absolutely stopped. For a time the symptoms of weakness and prostration were intensified, though the mental condition at once improved. Strange to say, however, with this weakness and prostration, a change came over the diseased parts. The tumour began to shrink, the ulcerated surface to contract, and the discharge became thinner, and then gradually ceased. The pain, too, diminished. So that the morphia was reduced from 4 grains to a quarter of a grain, which has not been exceeded since.

Some small measure of health and spirits by degrees returned. She is now fairly well and strong, looks younger than she did when I first saw her eleven years ago, and can walk some miles daily with ease. She sleeps and eats fairly, and takes one glass of porter daily.

With regard to the present condition of the breast, which I have recently examined, there is a hard cicatrix adherent to the ribs, from which oozes a slightly sticky, inoffensive fluid. Some irritability is complained of in the skin of the axilla, where the glands have been for a long time, to my knowledge, indurated.

A photograph, for which I induced my patient to give a sitting about five months ago, gives a good representation of the present state of things, and still better perhaps an enlarged transparency, which I have had taken from it. If these and the history of the case do not sufficiently establish the accuracy of the diagnosis, as one of malignant disease, the lady still lives, and could be induced, I think, to submit to examination at the hands of any member of the Society who is sufficiently interested in the case to desire to do so.

For want of a better title, I have called this case one of 'Quiescent Scirrhus.' For the patient's sake, I hope it may long continue to deserve the name.

Remarks.—About three years ago, after improvement in the general health had set in, a painful onychia of the ungual phalanx of the first finger of the left hand caused considerable trouble. Though its aspect threatened malignant mischief, it gradually quieted down, leaving the ungual phalanx bent at a right angle and stiff. This is well shown in the enlarged transparency.

2. Is it possible that the extreme prostration and feeble powers of nutrition were successful not only in bringing the bodily powers to death's door, but at the same time in starving the abnormal breast-growth, and arresting its progress?

3. If this be so, may not the well-meant attentions of friends who press food and stimulants on those afflicted with this disease, to keep up the strength, as they say, be in reality the very means of aggravating their sufferings and accelerating the end?

4. Had Chian turpentine, or Count Mattei's specific, or any other vaunted specific, been tried in this case, would not the evidence in its favour have been as strong as it could be from a single case, though at the same time absolutely misleading and false?

XXVII.—*Cases of Erythema or Herpes Iris.* By H. Radcliffe Crocker, M.D. *Read February* 25, 1881.

Wm. G., æt. 23, a butcher, had his first attack of this eruption in August, 1878, while on a voyage to the Cape of Good Hope, in charge of some horses. There was no defect in his food that could be ascertained. He states 'that three places came upon the back of the forearm, each

as big as half-a-crown, which began as a pimple and spread from that. It seemed to eat a hole which took a long time to heal. This spread at the end in rings—the centre red, the next a white broad ring, and outside it a narrow brownish red one. It itched and burned, and, after getting to the size named, the ring broke up and it gradually healed. No others appeared at that time. The whole lasted about three weeks.'

The second attack came in January, 1879, a week after a feast of mussels; first appearing upon the hands and then upon the legs and toes, about three or four at a time. They reached the size of a crown-piece; were always quite symmetrical, though the second of a pair sometimes did not come until the first was dying away. One on the top of each big toe led to the falling off of the nails of those toes. I saw him in February, 1880, when the eruption had been present for a year without intermission, though it was better in August while at Harrogate, and remained so until Christmas, when it came out again more abundantly after taking some brandy, he being usually an abstainer, and for the previous five months a vegetarian. He does not think it is affected by the seasons.

The eruption was mainly on the forearms, hands, especially the fingers, and on the legs and feet, more below the knee than above it; there were very few on the trunk, and those not above the waist.

Each spot appeared as a red papule, about $\frac{1}{16}$ inch in diameter, with red areola about $\frac{1}{2}$ inch across. One that came out the day before I saw him had a yellow solid plug at the apex, and was not round a hair; but generally they form a yellow mattery head, with a pink ring. The pustule bursts, and there is then a hole with a brown pinky circle around it, and that encompassed by a white one. Sometimes the position of these rings is reversed—*i.e.* the inner circle is white and the outer pink. Then, again, instead of the pustule, a large flat bleb, never tense, may be formed with a narrow, deep, red ring, and a pink blush beyond. In all, the inner zones present the appearance of fluid having been effused under the cuticle. The eruption gradually got well, not, I think, influenced by treatment; and he was under my colleague, Mr. Godlee, for some months for a preputial chancre. In November, 1880, he again presented himself at the hospital, with a recurrence of the eruption upon the hands, and I brought him to the Society, but he had unfortunately spoiled the distinctive features of the eruption by applying water

dressings, which he said relieved the tingling. The eruption was the same as before, but only on the hands. Until he had syphilis last year his general health was good, except a slight tendency to constipation. When the rings break up the eruption dies away, leaving only a red stain, which also gradually disappears. The above is a fairly typical case of one form of the disease, and I have brought a child here to-night to show the scars left by the other less common form of this affection.

She came to the hospital when 2½ years old, in June, 1879, during intensely hot weather, with a ring of erythema about an inch in diameter, upon the face, neck, and shoulders. When I saw her three days later the rings had disappeared, and large tense bullæ had appeared in the middle of the site of the rings. A day or two later a ring of vesicles ⅛ in. in diameter surrounded each bulla, and the fluid within the vesicles became purulent and dried into an eschar, which when detached left the rings of cicatrices which now disfigured her.

Two less marked attacks have occurred in the two successive winters. Besides these, two other cases of similar character to the first, but less pronounced, have recently come under my notice, having been kindly transferred to me by my colleague, Mr. Barker. One was a man, æt. 23, who for five successive Novembers had been the subject of this eruption upon the fingers and back of the hands, the patches being not often more than ¾ inch in diameter, occurring symmetrically, but not always at the same time on both hands: no other part was affected. Its earliest appearance was that of a slightly raised red disc ⅛ in. in diameter. Three days later the centre was depressed and deep red; the spreading edge was paler and more raised. Then the periphery grew whitish, as if the cuticle was raised; but sometimes there was a faint red narrow ring beyond. The patient had had syphilis, but was in good health when seen. The eruption got well very soon after I saw him, but reappeared when the severely cold weather set in. The fourth case, a woman, æt. about 30, had had an attack every October for three years; had only one or two patches on the fingers, and it was usually confined to the right hand, and acquired a diameter of ¾ inch before it broke up. Her general health was not very good, and she had been suffering from some uterine disorder.

In all the above the usual feature of recurrence was well

marked, and in some the tendency to recur in the same month—or, at least, the same season—was noticeable. Spring is usually said to be the commonest time, April being the especial month; but three out of my four cases were affected by the cold weather. Three were young adults, and one a child—a fact in accordance with most authorities, except Dr. Tilbury Fox, who stated that it most commonly attacked elderly people. The fingers and toes and the backs of the hands and feet are the especial parts attacked, but the forearms and legs were often implicated, and the face (as in the child) and trunk may be involved. A universal herpes iris does occur, but rarely. Authors differ with regard to sex, and there does not appear to be much difference in their relative liability. In the first case errors in diet appeared to determine or aggravate an attack. Although it was called herpes iris, the view that it is an erythema now meets with almost universal acceptance. Case II. was valuable in relation to this point. There was a distinct ring of erythema for some days before the vesicles appeared. The great variations in appearance depended mainly upon the amount of fluid effused, and whether the vesicles were consequently well developed, remained distinct, or became fused together. Finally, it often occurs without any apparent defect in the general health of the patient, and it runs its own course in a few weeks without being influenced by treatment. Some recommend desiccant powders locally, while Case I. found most relief to the burning sensations from the application of water-dressings.

The case brought to-night is interesting by way of appendix to the above, for while in a comparatively early stage the rings of different colours would entitle it to the name of erythema iris, when the patches had increased in size and coalesced the narrow raised gyrate margin with the flat discoloured centre represents an erythema marginatum.

James W., æt. 2 years, was brought to the East London Hospital for Children, on February 18, 1881, with the following history. He had had measles at Christmas 1880, followed by conjunctivitis. On February 7, 1881, there appeared upon the arms red spots about ¼ inch in diameter, symmetrically disposed upon the backs of the arms. In the course of the day they got to the size of a shilling; and in the course of from 48 to 72 hours coalesced and enlarged at the periphery, while the centre subsided, and now embrace the arm for two-thirds of its circumference. Next to the arms a similar eruption came upon the head and face, and then the neck

and ears. Five days ago it came out upon the legs; two days ago upon the body. When I saw him on February 18 his condition was: On each side of the neck below the ears is a large patch, 3 inches by 2 inches, involving the lower part of the ear. It consisted of a raised, bright red margin, $\frac{1}{3}$ inch in diameter. The colour on the inner side of the margin has a slight violet tinge, while inside the surface is lower than the margin and of distinctly purple hue. The surface is here (except the colour) normal; round the neck is one continuous patch, like a lay-down collar resting upon the shoulders, and about 2 inch wide. In front the outlines of the component small patches are still visible; behind, coalescence is complete, and only the raised margin and internal discolouration are seen. The trunk in front for the upper third is covered with raised red papules, from $\frac{1}{4}$ inch to a pin's head in size, while above they have run together into the collar; below they are sparse; the small ones have only been out two days. The back is very thickly covered with mostly small papules, with some slight tendency to be in rings. Below one or two are $\frac{1}{2}$ inch broad. The lower part of the trunk in front is clear, except two or three on the pubes. The arms, as before said, are nearly encircled from the lower half of the upper arm to the wrist; the clear part not yet invaded is in front. There are only two or three on the backs of the hands. There are a few on the buttocks and thighs $\frac{1}{2}$ inch in diameter; one $1\frac{1}{2}$ inches across at the bend of the knees. On the calves they are very large—most on the right. In front they vary from $\frac{1}{2}$ inch to 2 inches, the smaller sizes predominating. In a typical one, about $\frac{3}{4}$ inch in diameter it is quite circular; outside is a bright red ring $\frac{1}{3}$ inch thick, and raised above the surface for about $\frac{1}{16}$ inch; within it is a violet zone $\frac{1}{12}$ inch thick, and then a lighter violet depressed centre. Where the process is subsiding intermediate tints may sometimes be observed. Those upon the head have subsided, leaving only violet stains; but a few are present upon the forehead. On the centre of the tongue is one the size of a sixpence, with two small vesicles upon it, and there is another on the gum in front. He tears at his head, screams sometimes, and says his foot aches, and at night is rather delirious; his temperature is now 101·4°.

The boy was kept in the hospital, but no medicine was given. On the 2nd the patches on the limbs increased and coalesced, and when shown to the meeting on the 25th the process had subsided, so that there were only large violet surfaces enclosed by a raised red margin about $\frac{1}{4}$ inch in

diameter. His temperature had come down to normal by the following week.

March 4.—The eruption had completely gone, and only the purplish discolourations of the skin marked the former positions of the eruption. Taking the disease as a whole, it merits the name erythema multiforme, while the iris patches at one period of its course show its close alliance to the other forms that I have been discussing. We have, therefore, the following forms of this curious condition, with diversely coloured zones :—

1. Those which form one or more rings of vesicles round a central bulla, which either remain as vesicles, or become pustular, and then leave scars—the typical herpes iris.

2. A succession of concentric zones, the outer one consisting of the cuticle raised by the effused fluid.

3. Concentric zones of erythema, which remain erythema only throughout, and which may constitute the whole eruption or be part of a multiform erythema.

XXVIII.—*Cases of Erythema and Herpes Iris.* By Frederick Taylor, M.D. *Read February* 25, 1881.

CHARLES V., æt. 40, a cellarman, was admitted to Guy's Hospital under my care on February 5, 1879.

With the exception of an injury to the ribs, six years previously, he had been quite well till the week before Christmas, 1878, when for about eight days he was ill with 'inflammation of the lungs.'

On January 27, he was seized whilst at work with violent sneezings and waterings of the eyes, and that evening found his gums and palate becoming swollen, and he could only open his mouth with difficulty. He consulted a medical man, and two days later he had recovered from these symptoms, but then noticed the eruption of which he complained on admission. It commenced in the form of blisters, to the number of twelve or more on the left thigh. They were about the size of a shilling piece, and contained a watery fluid. The next day the eruption appeared on both legs and arms, and he had a burning sensation in his feet and pains in the joints, especially the knees. The eruption then spread all over him, affecting thus the head, face, and trunk in addition to the limbs.

On admission the eruption was more or less present over the whole body, the abdomen being the only part which was entirely free. It consisted of a number of vesicles or bullæ of various sizes, and for the most part arranged in a circular manner, so as to include an area of comparatively healthy skin in a ring of blister. Some such rings were formed of six to eight small isolated vesicles with clear colourless or pinkish contents. Other rings were formed of the continuous bullæ of crescentic or completely circular (circinate) form, and the contents in this case were mostly deep pink or purple, or almost black. In other places again, two or more circular bullæ appeared to have run together, to form irregular scalloped figures, and other patches again were formed by combinations of the above described varieties. Some such circles and patches measured two inches in diameter. The bullæ were situated upon a slightly inflamed, but not indurated base, and enclosed skin either quite natural or slightly discoloured. This description applies more particularly to the lower extremities and hands, which were the parts more severely affected; the outer aspect of the left thigh presented several patches, formed by the coalescence of three or four large circles. In many other parts, especially the forearms, the eruption was more pustular, and the ringed appearance was not at that time so fully developed as on the lower extremities. The face, which was much swollen during the early stage of the eruption, showed a number of brownish scabs which were thickly aggregated about the alæ of the nose, and almost closed the nostrils. The ears were also scabbed over in the same way, and if the scabs were detached a bloody or serous fluid exuded from the surface. On the chest were two or three pustular elevations, and on the back about a dozen pustules. There were several dry brown scabs on the scalp.

The eruption gave rise to no itching, but a burning sensation, especially on its first appearance.

On the uvula was a patch of superficial ulceration, running on to the adjacent part of the soft palate. The tongue was furred. Temp. 100·5°, pulse 100.

Appetite poor, bowels regular, urine rather high-coloured, no albumen, no sugar. Sp. gr. 1020.

The drawings represent the outer side of the left thigh and the front of the left forearm, and were taken the day after admission (Plate III.).

The patient gave no history of gonorrhœa or syphilis,

and I ascertained from Dr. Kennedy, who had first attended him, that he had had the following medicines under his care, namely: when first seen with sore mouth and general feverishness, an ordinary saline mixture; a few days later, when the rash had appeared, iodide of potassium, 7½ grains every 4 hours; and later still iron and arsenic. In the hospital he was ordered dilute nitric acid with infusion of senna and gentian.

He began rapidly to improve. Nearly all the bullæ ultimately became full of dark purple blood-stained contents, and then burst, the secretion subsequently drying into a dark scab, or leaving an open ulcer, corresponding in shape to the bullæ. These ulcers were often rather slow in healing, and were often deep enough to leave considerable scars. Some of the patches recovered without any ulceration.

The following will give an idea of the rate of progress. On February 12, one week after admission, the scabs about the nose had gone away; there was an ulcer on the upper lip, most of the bullæ on the arms and legs had burst leaving several ulcers, and the hands were far advanced towards recovery.

On February 19, the ulcer of the lip had healed; the skin was still red, and tender at the site of the former bullæ.

On March 3 he was about the ward, and on March 11 left the hospital, with the ulcer on the left leg still not quite healed.

At my request he called at my house on February 1, 1881, two years after the illness, to show me the scars.

On the point of the nose is a pitted scar the size of a threepenny piece, and there is some deep scarring on the right ala, so that it is rather sunken below the level. On each elbow is an irregular pink cicatrix, representing the confluence of two or three circles, the tissue somewhat thickened and keloid. Above this are a few circular superficial scars, and on the left arm a ringed cicatrix forming 5-6th of a circle.

On the left forearm the scars are small, circular or oval, but irregular; there is one well-marked crescentic scar near the wrist. Both legs are thickly covered with round and oval scars, and the skin is deeply pigmented in connection with large, almost varicose veins. The left thigh presents on the outer side numerous scars corresponding in position to the bullæ represented in Plate III. They are small, shallow, and arranged in smaller or larger circles and crescents.

Fig. 1.

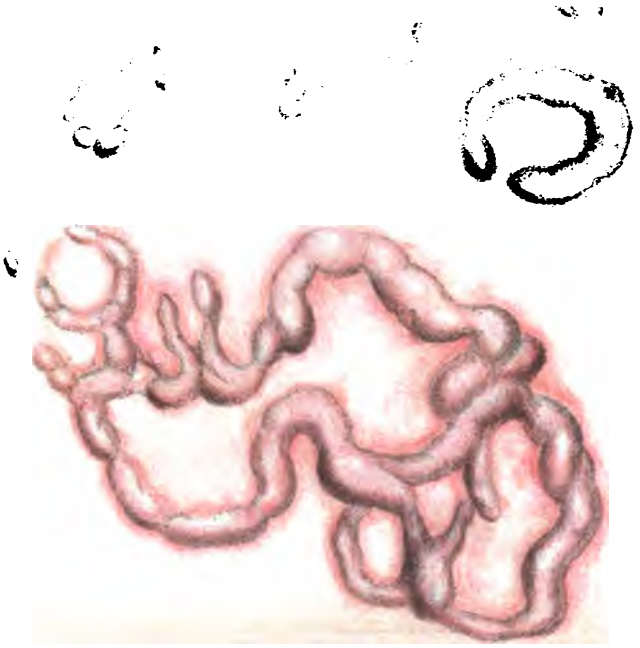
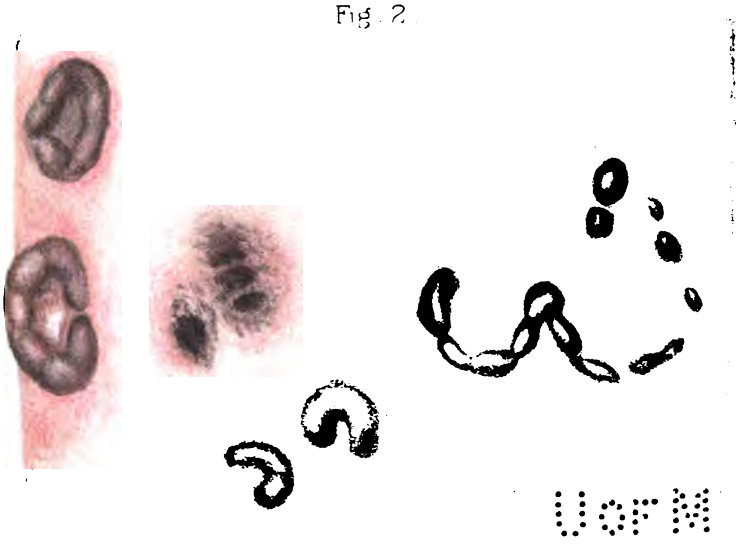


Fig. 2.



W. Hurst del.

Mintern Bros. Chromo. lith.

Dr. F. Taylor's Case of Herpes Iris.

UofM

The patient is in good health, and has had no recurrence of the complaint.

Case II.

Edward R., æt. 5 months, was first seen by me on November 3, 1875. It was a fat, healthy-looking child, and on October 18, sixteen days previously, it had been vaccinated in four places on the right arm. The present eruption began on October 28 as pimples on a red surface, involving and surrounding the vaccination crusts. Subsequently spots appeared on the arms, chest, abdomen and back, and a blister appeared on the forearm on November 2. The condition on November 3 was as follows:—On the right arm are four blackish-green vaccination scabs, with a little inflammatory areola around each. The rest of arm, from shoulder to elbow, presents a continuous surface of pale pink colour bordered above and below by a deeper red margin. On the outer side of the forearm are a number of circular and oval patches, touching each other by their borders, but not running together. Each patch is of a bright pink colour, slightly raised, with a deeper red, very narrow, more prominent margin. In size they varied from ⅓ to ½ inch. In the centre of many was either a bright red spot or a pimple—apparently the original point of disease, or a fresh outbreak in the healing centre. One large patch on the forearm had in the centre a bleb as big as a pea, and along the margin of the same patch were other small vesicles the size of a pin's head or bigger. A few vesicles were seen on the adjacent patches on the arm, but none on those lower down.

On the back the circular patches were larger, but not so bright coloured. Only a few had the central red spot, the majority being of large size and uniform pink colour, except for the thin bright marginal ring.

November 4.—The patches on the back are somewhat fainter, but on the forearm are many more vesicles. Some of the lower patches are larger, and present at least two incomplete rings of small pin's head vesicles. The large bleb seen yesterday has dried up, but other smaller vesicles have formed on the same patch.

November 5.—The patches on the back are fading without any further vesicle formation, but, on the other hand, are not spreading into gyrate forms, nor dying away with marked

bruise-like colours. Some more small circular red spots have appeared on the thighs, feet, and chest. The arms are not much altered.

The child did not attend again, and I have been unable to trace it, so that I cannot say whether there has been any recurrence.

Case III.

Wm. W., æt. 9 years, was admitted under my care on June 26, 1877.

He is said to have been very small when born, and never to have been quite healthy. He has lost flesh lately, has had cough for three months, and has brought up blood from his mouth and nose in some quantity, as much as a teacupful at a time, about twice a week. He has been lately languid, irritable, unwilling to take food, but craving for beer.

On admission he is of small size, and weighs only 28 lbs. 6 oz.

He has an eruption consisting of several circumscribed irregular red patches distributed over the chest and abdomen, and less abundantly on the neck, back, and lower extremities. Each patch is from $\frac{1}{4}$ to $\frac{1}{2}$ inch in diameter, and consists of a raised ring of about $\frac{1}{6}$ inch in width. On the ring are a few small vesicles, and in the centre is a yellowish crust, beneath which the skin appears normal.

In a few places isolated vesicles are seen, with a little areola of redness around each; the contents of the vesicles are serous and alkaline. Some of these patches appear to be spreading in the form of irregular rings, and some have healed, leaving a yellowish stain. The submaxillary, post-sternal, and inguinal glands are somewhat enlarged. Heart and lungs normal, urine of sp. gr. 1018, neutral, free from albumen. Temp., 98·4°; pulse, 88; respirations, 40.

During the next few days it was seen that the patches healed in the centres and spread at the circumference, coalescing with each other.

On June 30, an opaque bulla containing pus formed just below the umbilicus, and a few days later burst, and healed, leaving a brown stain. Typical patches continued to present a ring of redness, on which were seated five or more vesicles.

On July 11 much of the staining had disappeared, and healing patches showed a ring of small crusts, corresponding

to the former vesicles, and more or less closely arranged. The eruption, however, continued, more vesicles appearing from time to time, and individual rings enlarging circumferentially, as was shown by two tracings taken respectively on July 15 and 25.

This enlargement of the rings was now seen to take place in the following manner: around a patch that had already crusted a fresh areola of redness would appear, and on this small vesicles arise, at first containing clear fluid; in a short time it became semipurulent, and after being out for about 24 hours the vesicles burst and the fluid dried into pale crusts. On their removal the skin was found to be stained. The crusts were found only to contain scaly epithelium and pus corpuscles.

On August 7 the eruption had nearly all gone, and the patient left the hospital well on August 18.

Remarks.—I have ventured to bring these three cases before the Clinical Society in conjunction with Dr. Crocker's cases of erythema iris, but the first case will perhaps be allowed to be in itself sufficiently interesting. They illustrate differences in the appearance of cases which must probably be classed together, whether they be called erythema iris, or herpes iris, or hydroa.

In the case of the infant, the eruption in its earliest stage closely resembled erythema marginatum, and was almost an exact copy of a model in the College of Surgeons, labelled erythema papulatum; and as it developed further, it approached a model in the Guy's Hospital collection described by Dr. Hilton Fagge as herpes circinatus, erythema multiforme (?). I should regard it as essentially an erythema vesicating in parts. In the case of the boy the vesicular features of the disease were more marked, and in the case of Charles V., Case I., they formed the chief part of the disease, the vesicles actually appearing, as may be seen from the drawings, without any preceding redness. It may be asked, does this absence of early redness require us to remove it from the class we are considering, and to place it under the heading of pemphigus as a pemphigus circinatus or serpiginosus? Mr. Hutchinson has spoken of hydroa as essentially a vesicular form of erythema multiforme; but Bazin describes the redness as appearing after the vesicle, and subordinate to it. If this is an essential point, it would separate this case from the other two.

Other features of the case point to an [illegible] with the

cases described as hydroa: its sudden outbreak and spontaneous disappearance; its symmetrical distribution; the co-existent affection of the joints.

The first appearance of the eruption about the vaccination crusts is an interesting feature in the case of the infant.

XXIX.—*Fracture of the Lower Dorsal and Upper Lumbar Vertebræ treated with Sayre's Jacket. Immediate relief from pain and ultimate recovery, without paralysis or much deformity.* By BERKELEY HILL. *Read March* 11, 1881.

ON December 1, 1880, John Richards fell about twenty feet through the gap of a lift, from an upper to a lower floor of the building, in which he was at work. He was found doubled forwards and overhanging the edge of the trap of the floor, where his fall was arrested. He became at once unconscious, and remembered nothing more until he found himself in hospital. On his way to University College Hospital he is reported to have had two fits. He had not been liable to fits before his accident. On admission and for twenty-four hours afterwards the patient suffered from severe concussion of the brain and spinal cord. He was wholly unconscious for about half an hour after his arrival, his pupils widely dilated and insensible; the skin hot and sweaty. Pulse, 120; respiration frequent, shallow, and puffing. A severe contusion just behind the right parietal eminence formed the only sign of injury to the skull.

In the back there was considerable prominence of the spinous processes from the tenth dorsal to the second or third lumbar vertebræ. These projections were surrounded by a large oval, fluctuating swelling, which occupied the vertebral grooves for some distance. On pressing the fingers through this swelling, two spines could be felt to be slightly movable. There were one or two small bruises of the skin overlying these prominent vertebræ, but none over the abdomen, nor were there any signs of visceral injury. The urine drawn from the bladder was normal. As the patient recovered his senses, he was found to have complete control of the muscles of the lower extremities, though any movement was avoided from the extreme pain it caused.

In the course of the day the pulse rose to 132, the respiration to 40; and the countenance became livid, with purple tinge of lips, and blueness of the finger tips. He complained continually of pain, and had every appearance of being in great pain. He lay constantly on the right side, with the body bowed forwards.

At 7 A.M. of the day after the accident his temperature was 103. He passed urine naturally and could move all his limbs if desired, though any attempt greatly increased his pain. The slightest examination of the back was loudly complained of. At 2 P.M. on the day after the fall (about thirty hours afterwards) the patient was encased in a Sayre's plaster jacket. To do this he was lifted in a sheet from the bed on to a horizontal table, which, swinging at its centre like a toilet looking-glass, could be changed to a vertical position. The patient was thus slung in the suspender by his head and shoulders, without any jolt or jar to his trunk. Though this alteration of position was made as steadily and gently as possible, the patient's outcries were continuous, until the plaster jacket had set somewhat. He was then replaced on the swinging-table, lying on an air-bed until the plaster had thoroughly set. Then the removal from the horizontal table to his bed was submitted to without any complaint of pain, and his subsequent condition was that of recovery. His temperature fell; he slept, and soon asked for food. In three days after the jacket was applied he could roll himself from side to side in bed without the slightest pain. On December 4 the patient complained of sharp pain on the dorsum of the left foot, and that the weight of the bed clothes was unbearable. Even a light touch of the finger caused sharp pricking pain to be felt over about half of the dorsum of the foot. There was no loss of sensibility elsewhere. In the forenoon of the 5th it was found that he had lost nearly all power of moving the left lower extremity at the hip, knee and ankle; the toes could be slightly flexed. His power of moving the right limb was unabated. There was no symptom of loss or power elsewhere, except that 'pins and needles' were felt in the fingers of the right hand. The control of the left lower limb was regained in two days completely, and the hyperæsthesia of the back of the left foot disappeared in about thirty-six hours. There were no more symptoms of nervous irritation after this. The patient felt so well that he was much annoyed because he was not allowed to have

his jacket off and sit up on Christmas Day, twenty-five days after his accident.

On January 17 (nearly seven weeks after the accident) the jacket was removed and the patient allowed to go about the ward. On February 2 he left for the Eastbourne Convalescent Hospital. The railway journey, during which he sat up, shook him a good deal, causing some aching pain in the lumbar region, but this subsided after two days' rest in bed, and he has had no pain since.

On February 24 he returned to town without any inconvenience from the railway journey, and is able to walk two or three miles without fatigue.

The evidence of the fracture and displacement of parts of the lower dorsal and upper lumbar vertebræ is easily detected now that the swelling of the soft parts has subsided. The spines of the eleventh dorsal and first lumbar are evidently unnaturally prominent, while in the right vertebral groove the displaced laminæ of these vertebræ can be felt firmly fixed almost immediately under the skin. The general curve in this region is shown by a curved line, which corresponds to one taken on February 2, and differs somewhat from the second curved line, which was taken while the patient was suspended, and immediately before the application of the jacket. Alteration of posture does not affect this curve: the spine is rigid at this part.

It is difficult to define the extent of the fracture of the broken vertebræ. Certainly the laminæ of two—the eleventh dorsal and first lumbar—were broken, as shown by the mobility of those spines after the accident, and from the abnormal position those processes now have. Probably, also, the bodies of one or more vertebræ were crushed together, from the angular projection of the spines. The almost total absence of paralysis and the complete restoration of function to the spinal cord were probably due to the injury having taken place so low down the spinal column, almost at its termination.

The immediate relief which was afforded by the jacket is a point worth attention. Certainly the patient's condition at the time of its application was not promising. He was still suffering much from the effects of concussion, and the least movement gave him intense pain.

Still, the absence of paralysis emboldened me to attempt to apply the jacket. This was done with the concurrence of my colleagues, Messrs. Marcus Beck and Rickman Godlee,

who also kindly assisted in superintending the management of the patient during the application. To Mr. Beck's suggestion, indeed, the employment of the jacket is due, for that gentleman drew my attention to two cases reported in the *Centralblatt*,* where the patients had recovered without paralysis.

The patient was shown to the Society on the occasion of this paper being read. He was last seen in July 1881, in good health, free from any twitching or pain in the lower extremities, and able to work at his usual employment.

XXX.—*Case of Excision of the Tongue through a small supra-hyoid wound, with remarks on the best material for the loops of Ecraseurs.* By RICHARD BARWELL. *Read March* 11, 1881.

JAMES A., æt. 60, was brought to me by Mr. Bunn, of Upper Norwood, with epithelioma of the tongue, Feb. 11, 1881.

He has always enjoyed good health, has no family history of cancer. Twelve months ago, he first noticed a little lump on the right side of the tongue. It was removed by ligature, but returned almost immediately, and again was removed in ten weeks, and returned as the wound healed, and for the last seven months had been rapidly growing.

The tongue, almost as far back as the finger could reach, was a mass of dendritic growth, papillomatous, yet having deep holes of ulceration. The saliva was constantly dribbling over his chin and down his clothes, wetting him through. He had lost flesh, but not very greatly, was very feeble, pulse 108, small and weak.

On Jan. 13, I removed the tongue just behind the foramen cæcum, by the method to be immediately described. He suffered no pain after the excision, got up on the 10th

* *Centralblatt für Chirurgie*, 1880, p. 97: 'Der Thoraxgipsverband bei Frakturen der Wirbelsäule,' von Professor König in Göttingen. (Original-Mittheilung.) *Centralblatt für Chirurgie*, 1880, p. 737: 'Zur Behandlung der Frakturen der Wirbelsäule mit dem Sayre'schen Gipskorsett.' Von Dr. W. Wagner, in Königshütte. (Original-Mittheilung). There is also a case of Spratley's, mentioned by Harrison: 'Lectures on the Surgical Disorders of the Urinary Organs,' p. 51, 2nd ed.

day. He went out on Feb. 4, having been detained, that I might give a lecture on the case, longer than necessary.

I have brought the patient here, and wish to show him more especially in view of my method of operation; which I believe gives more facility for reaching far back in the mouth than any other, with less mutilation, less loss of blood, and less pain. The method, in certain points, resembles Mr. Nunneley's, but in others differs from it very widely, especially in the place where the mouth is entered, in the depth which can be reached, and in the subsequent painless condition of the stump. That surgeon, it will be remembered, opened the floor of the mouth under the frænum of the tongue, and here introduced the loop of an ecraseur chain.

My procedure is this: finding the hyoid bone I pass to its upper margin a scalpel, whose edge looking forward makes in that direction an incision about ⅓ inch long, strictly in the middle line, exposing the *raphé* of the mylo-hyoid muscle which also is incised, and then the edge of the two genio-hyo-glossi are bared; these muscles are separated one from the other, so that the finger tip, passed into the wound, impinges on the mucous membrane uniting on each side the tongue to the side of the jaw. An armed Liston's needle is now passed into the wound, guided under the floor of the mouth, and only allowed to enter that cavity behind the last molar tooth of the left side; the thread being held *in sitû* the needle is withdrawn. Now a like procedure is completed on the right side, the loop of the armature being retained in the mouth. To the first named thread the end of an ecraseur wire bent into a hook shape is attached (I will describe the sort of wire immediately), and drawn into the mouth; disengaged from the thread, its hook is passed through the wound into the loop of the second armature, and drawn from the mouth out at the wound and attached to the ecraseur.

Now a wire introduced in this way may be placed, if one will, close to the epiglottis; there is no difficulty whatever in getting it there; to retain it at that place while being tightened, it is only necessary to pass into the hyoid wound a Liston's needle, and with the finger on the dorsum of the tongue guide this needle, through its centre, out at the raphé as far back as it may be necessary to divide the organ.

The ecraseur now does its work, and in a certain number of turns the posterior portions of the tongue are severed. Another ecraseur is then passed between the lips into the

mouth, an assistant draws the tongue forward through the loop, which the operator presses well down in the just completed wound at the back of the organ. By keeping the nozzle of the instrument under the tongue behind the incisor teeth and tightening the screw, the part is severed from the floor of the mouth, and taken out from between the lips.

Now this operation, if time sufficient in working the ecraseur have been taken, is all but bloodless. The first cut through the back of the tongue may, since large vessels are not there situate, be quicker than the second cut, where the biggest vessels run. Even if an artery do bleed in this part it is well within reach of forceps.

The gustatory nerves being divided close to the jaw leaves the stump painless. Often the wire will not cut the nerves, which when the tongue is taken out of the mouth may be seen as long, white, and branching threads lying loose in the cavity, these should be cut away with scissors close to angle of the jaw; the truncated portion then retracts within the gustatory groove, and being quite out of the way, no pain about the wound of the tongue is experienced. Patients recover from this operation with great rapidity.

One chief object of this communication is to show the patient, whose stump of tongue has grown or come very much forward since the operation, and who talks with great distinctness (saying even 'theatre' and 'tittle tattle' plainly), also to say a few words about what I have found to be very much the best material for the loop of ecraseurs. Chains are generally, I believe, acknowledged to be unreliable, and instrument-makers usually supply a single wire, pianoforte wire, which it is true does not often break, but is so inflexible as to be inconvenient, and for the operation just described cannot be used. The twisted wire too, which is furnished is stiff, unmanageable, and in my experience not very trustworthy.

The wire which I have here is, I have found, very flexible, and is extremely reliable just because it is made of iron, not of steel; and is annealed, not tempered. It is a strand of the ordinary wire fencing, which can be bought of Mr. Newall, at the corner of Wellington Street, Strand. The cords sold at that establishment of various thicknesses, are made of six strands, twisted round a piece of string, each strand is made of six wires twisted round a piece of thread. I use the separate strand unwound from its fellows. It is so flexible that it may be bent to a hook-like curve suitable for being

drawn through tissues without lacerating them. It is also, as I have said, exceedingly strong; I have never yet had a breakage. Also it has the great advantage of being very cheap, so that it may after use be ungrudgingly thrown away, saving the next patient from possible infection. I may also be permitted to say a few words about ecraseurs. Most of them are made so that one end of wire is fastened to the runner, the other to a fixed point. The consequence is that the part on the movable side does all the work, becomes exceedingly tense, and is therefore in double danger of breakage, while the other side does little or nothing. I strongly recommend the use of an instrument with both ends of the wire on a movable nut, because it does cleaner work and affords less chance of breakage. Of course the surgeon must be aware that he must turn the screw at only half the pace that he would apply to the more usual ecraseur.

It has appeared to me that the Society would bear with these remarks concerning what may be called mere detail. It is on such detail that the success of operation often, and the comfort of the operator always depends. I know very well the sense of disappointment and disgust at the failure, in a critical moment, of an instrument concerning whose trustworthiness all assurance has been given.

XXXI.—*Case of Round-Celled Sarcoma of Femur, in which no repetition of the disease took place during the remainder of the patient's life, namely for six years after the operation.* By Berkeley Hill. *Read March* 11, 1881.

In August 1874, I amputated the left lower extremity of C. W., æt. 26, at the hip-joint, to remove a tumour which had incommoded the patient by its bulk and by the pain attending it for two years previously. After the limb had been removed, it was found that the tumour, which is now in the Museum of University College, arose from the muscles attached to the femur, but was not connected with the bone itself, which it surrounded as a thick sheath. The growth was carefully examined by Mr. Rickman Godlee, who described it to be white and glistening on the surface, bulging

at the part cut, and yellowish in places. Under the microscope the structure was evidently that of an ordinary round-celled sarcoma, with a very distinct stroma.

The patient made a tedious recovery owing to sloughing of the anterior flap, for the extension of the tumour forwards had separated the integuments from the femoral vessels. But in the end a sound scar was obtained, and the patient learned to wear an artificial limb, and walk with the aid of a stick. This is an unusual attainment by those who suffer complete removal of a lower limb.* For five and a half years the patient enjoyed fair health, earning her living by working a sewing machine until March 1880; when aching pain in the left hypochondrium and lumbar regions began. For relief of this pain, C. W. came to University College Hospital, May 25, 1880. The scar was then sound and freely movable, except where attached to the iliac spine. No swelling could be detected in the left iliac region, the aorta could be traced to its bifurcation. But at the outer margin of the left rectus abdominis, a firm fixed mass could be felt below the margin of the thorax and apparently lying in front of the left kidney. No other abnormal condition of the abdomen or of the thorax was detected. The patient's sufferings greatly increased, the growth of the left renal region enlarged, and on June 25 the patient was admitted into hospital, where she died on July 29, 1880, gradually exhausted. For a short time the urine was loaded with lithates, and contained $\frac{1}{5}$ albumen. Latterly this disappeared, and the urine, though scanty, was normal. The temperature throughout was either natural or rose to 99°F. Obstinate vomiting and dragging pains in the left side were the most constant symptoms. The tumour grew steadily until July 13, when it could be felt a hand's breadth below the level of the umbilicus: inwards it was lost at the middle line. It was not tender. After that date the swelling considerably subsided, so that a few days before her death the tumour had receded to the level of the umbilicus. As the diagnosis was repetition of the sarcoma in the lumbar lymphatic glands, no exploring puncture was made.

The post-mortem examination was made on July 30. The thoracic viscera were fairly healthy. There were some old adhesions of the right pleura, and both lungs were moderately emphysematous; there were also several small

* The case thus far has been recorded in Vol. IX. of the 'Clinical Transactions' for 1876, p. 30.

encapsuled masses seen on section, some caseous, some calcareous—old tubercles. No new or recent growth whatever. In the abdomen were also some old adhesions, and under the pelvic peritoneum some old encapsuled deposits similar to those in the lungs. There was no recent peritonitis and no tumour. But on pulling aside the descending colon, some recent adhesions were broken down and pus escaped from an opening in the sac of an abcess connected with the kidney. The left kidney, the abcess and the descending colon were removed from the body in one mass. Further examination showed a ragged opening, the size of a pea, between the interior of the gut and the abscess. The left kidney was converted into a fibrous sac filled with pus; the pelvis forming one side, the outer rind the other. The pyramids and cortex were absorbed and replaced by enormously dilated calyces and pelvis. This cavity communicated with the gut in the manner described. Thus was explained both the origin of the tumour and its gradual loss of bulk during life. No stone was found, and the ureter was not dilated. The right kidney was moderately healthy. The liver was fatty, the spleen in an early stage of lardaceous disease. There was no trace of sarcoma in the cicatrix, lymphatic glands, nor in any viscus.

Considering the complete absence of repetition of this form of sarcoma—the round-celled—which is one most rapid in its repetitions, I have thought this case worthy of record. The long interval, six years, that elapsed after the removal of the tumour and its non-recurrence may be possibly due to the complete removal of the diseased parts, first by amputation, and next by the sloughing away of all parts that had been contiguous to it during life.

XXXII.—*A Case of General Bronzing of the Skin without constitutional symptoms.* By H. Radcliffe Crocker, M.D. *Read March* 11, 1881.

CARL GRANSKROM, æt. 22, a sailor, and a native of North Sweden, was sent to me by Mr. Benthall, of Hartlepools Hospital, and was admitted to University College Hospital, on December 7, 1880.

The history obtained through an interpreter was: he

had been in perfectly good health up to the time of the discoloration, now eight years ago; he was then in Sweden earning his living as a driver, and therefore often exposed to severe weather, but as regards food and other circumstances he was favourably situated. I could not ascertain that he had ever suffered from ague, syphilis, or any other disease, and his spleen is not enlarged. The darkening of the skin was first noticed round the neck, his friends accusing him of not having washed; nothing had been observed the previous morning; the skin round the loins next became darker, and the discoloration spread up towards the chest and down to the thighs. The skin now affected having arrived at its present condition in a few days, the patient does not think it has spread at all since the first week; but it is sometimes darker than at others, though never deeper than now. He has for the last three years been subject to headaches, generally coming on once a week, and he thinks his forehead is darker after an attack; he does not, however, consider that he is worse in any way since the discoloration than he was before, nor does he feel any better when the skin is lighter. He did not go to sea until two years after the pigmentation, and when he had few opportunities of washing he became sore under the arms, and the skin would crack. The parts now most pigmented were the first affected.

Present Condition.—He is a stoutly built man, about 5 feet 6 inches high, healthy looking, and judging by the hair, &c., of naturally fair complexion. The pigment is distributed in the following positions: upon the forehead immediately over the brows, upon the temples extending under the hair round the head towards the occiput, but not extending more than 1½ inches above it. There is some pigmentation at the sides of the cheeks round the mouth, and at the edge of the alæ nasi. The skin is quite fair round the eyes. Pigmentation extends over the whole of the neck and trunk, and over the axillæ and flexor surfaces of the arms as far as the wrists, but that on the forearms is very faint, while on the extensor surface of the arms it does not extend farther than the insertion of the deltoid. On the thighs, it affects on the inner side the upper two thirds, on the front the upper third and outside very slightly; the penis and scrotum are much involved. The distribution is perfectly symmetrical, but the depth of colour appears to be greatest where there is most friction. There is no sharp line of demarcation, but the discoloration gradually shades off to

the normal skin. The general colour is yellowish brown, but it is almost black at the back of the neck, axillæ, nipples, umbilicus, penis, and scrotum; much darker than the general hue over the abdomen, bends of the elbows, and in the inter-scapular region. The depth of colour appears to be greatest where there is most heat or friction.

The skin of the neck and axillæ is covered with closely aggregated small fleshy papillary masses, projecting about an $\frac{1}{8}$th of an inch above the surface; individually they are somewhat pear-shaped, the attached part narrowest, and are evidently hypertrophied papillæ. They make these parts rough to the touch and in ridges. Over the whole of the discoloured skin the natural lines are deepened, apparently by thickening of the intervening part. There is no approach to a scaly condition, the skin feeling quite smooth.

The mucous membranes, nails, conjunctivæ, and hands are unaffected. Sensation is normal.

There are some scars unpigmented, two smooth on the neck, and two or three white spots on the chest, due to the application of nitric acid before admission.

The patient has been subjected, since he has been under me, to alkaline baths, with plenty of friction, three times a week, without effecting any alteration in the colour.

I have removed a small portion of the skin of the abdomen and neck, and after hardening, have submitted them to microscopic examination, with the following results:—

In that from the abdomen, the pigment was deposited in the usual position, namely, the deepest part of the epidermis; the so called palisade cells of the rete, and those adjacent, were filled with pigment granules, and scattered granules were seen in the higher layers of the rete; with a high power, the pigment could be seen to have accumulated most at the margin of each cell; pigment granules were also scattered in or about the superficial vessels of the corium; pigmentation, however, was not the only change, the corneous layer dipped down into the interpapillary part of the rete, forming U or V shaped depressions in it which were filled up by layers of cells of the corneous stratum; the papillæ themselves were much elongated and narrowed between these inversions of the corneous layer, and would have often been scarcely visible but for the double line of pigment which bounded them.

The papillary growths on the skin of the neck were found to consist of an outgrowth of the papillary layer of

the corium; each little tumour was made up of several hypertrophied papillæ, the interpapillary processes of the rete being also enlarged. The pigment, as in the rest of the skin, was immediately adjacent to the papillæ, while the epidermis was normal. Between the growths there was the same increase downwards of the corneous layer. Pigment in the corium was very abundant, and in many parts it could be traced in the line of the vessels, and arranged in dots along the centre of many of the papillæ.

The histology of the affection, therefore, is plain enough, but the pathology is not so apparent. That it has nothing to do with Addison's disease is obvious, from the one fact that it has existed eight years unchanged, and without affecting the general health. When I showed him to the Society and asked for suggestions, Dr. Greenhow was kind enough to throw out the hint of the possibility of its being one of those cases of so called vagabond's discoloration, of which he has himself recorded some very well marked cases. A consideration of these cases, however, enables me to negative this supposition. There are two elements in the discoloration of the skin in these cases. Part of it is due to dirt and epithelial *débris* accumulating upon the surface from the want of washing, making the skin slightly furfuraceous. This can be removed, but not without some trouble, by alkaline baths and plenty of friction, but though the skin will be somewhat paler after these persistent ablutions, there will still be left pigmentation in the skin, which is permanent; this is due to the long continued scratching provoked by the pediculi which abound on these people—hence the distribution is most marked upon the warmest and most accessible parts of the skin. Thus, in one of Dr. Greenhow's cases, a pale band of skin was left upon the back, in the scapular region below the spine of the scapulæ, the part not readily got at by the nails. Moreover, owing to the special predilection of pediculi for the aged, the marked cases generally occur in elderly vagabonds. My patient is young, only 23 years. There is no evidence of pediculi, or any other cause of scratching, he is a fairly clean man, and alkaline baths have been used three times a week almost throughout his stay in the hospital, without any influence on the bronzing of the skin. Although thus negativing this suggestion, I regret that I have no satisfactory hypothesis of my own to offer, and shall be glad to obtain the opinion of the Society upon the case.

EXPLANATION OF THE PLATE.

FIG. 1.—Illustrating Mr. H. Morris's case of calculus removed from the otherwise healthy kidney of a girl, æt. 19. *See* p. 35. The figure shows the exact size of the calculus.

FIGS. 2 and 3 illustrate Dr. Radcliffe Crocker's case of general bronzing of the skin without constitutional symptoms.

FIG. 2.—Skin of Abdomen. *a*, corneous layer dipping down into the rete mucosum; *b*, rete mucosum; *c*, pigment in the deep layers of the rete. Magnified 120 diameters.

FIG. 3.—Two papillary growths in the skin of the neck. *a*, corneous layer; *b*, rete mucosum; *c*, pigment in rete; *d*, downward growths of the rete between the papillæ. Magnified 60 diameters.

FIG. 4 illustrates Mr. Davies-Colley's case of villous growth of the bladder, successfully removed by perineal section (*see* p. 104). One of the processes, magnified 200 diameters.

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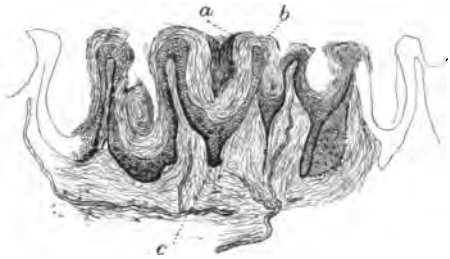

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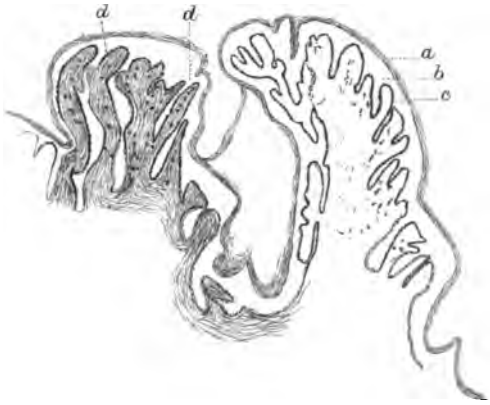

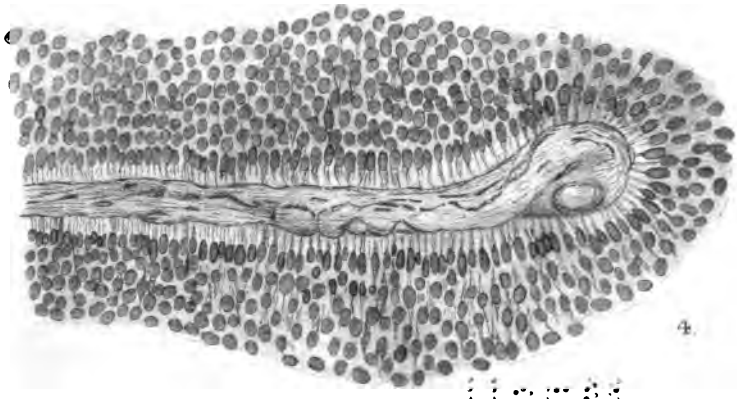

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XXXIII.—*A case of Bronzing of the Skin without constitutional symptoms.* By R. E. CARRINGTON, M.D.

THE patient, J. B., æt. 25, a native of Dantzic, was admitted under my care into the Seamen's Hospital on February 16, 1881.

Nine years before he had been an inmate of the Stockholm Hospital, suffering from 'inflammation of the lungs.' Since that time he had been quite well. He denied syphilis, and appeared not to have suffered from any of its symptoms. One year before, he had an attack of what appeared to be ague. This lasted three days, but was very slight, and there had been no return since.

He did not seek for treatment this time on account of the condition of his skin, but for an attack of acute bronchitis. The history of the cutaneous affection was as follows.

He left Quebec during July, 1880. He had a very rough and prolonged voyage, and was continually wet through. About the eighth or ninth week out he began to suffer from severe pruritus, the parts affected being the back and arms. At this time, he changed his clothes entirely, and he maintained that his skin was then white as usual; two days after he again changed his clothes, and then he discovered that it had turned brown. It had also become dry and stiff, and on pinching it between his fingers it cracked. His gums and teeth were perfectly natural. About two weeks afterwards he noticed an eruption of small pimples on his arms and legs; these became blisters, and exuded a clear fluid on their rupture; they then ran together, and his limbs assumed the appearance of being scalded. The so-called blisters, from his description, appeared to be bullæ rather than vesicles.

At the time of the attack the weather was very wet and cold, and there was no sunshine. The patient remained much the same up to the fifteenth week out, when swelling of the legs supervened. Soon after this the ship encountered a gale in the Channel, and he had to work at the pumps for one day. This greatly increased the swelling. In the first week of October 1880, he arrived at Rotterdam, and was treated there for three weeks by a doctor, who gave him arsenic. At the end of this time he again took ship, and in

the same month became an in-patient of the Newcastle Infirmary. Here he was told that he was suffering from scurvy. No other of the crew, however, had been attacked with that disease, and the rations had been good in quality and of full quantity. Whilst in the Infirmary he was treated by sulphur baths twice a day for a month, and was made to lie in bed between blankets. The colour of his skin, however, did not alter during his stay. On February 16, 1881, he was admitted into the Seamen's Hospital.

Condition on admission.—The patient was a well-nourished, strong, muscular man, weighing 11 st. 4 lbs. His hair was dark and his eyes blue. After recovery from his bronchitic attack he said he felt perfectly strong and well, without the smallest sensation of languor or feebleness. This has been the case both before and after the discoloration of the skin supervened. With the exception of the physical signs of his bronchitic attack, clinical examination of his organs revealed nothing abnormal. The heart sounds were well marked, regular and distinct. The gums were pale, and teeth irregular. He had not suffered from nausea nor vomiting. There was some tenderness on pressure over the liver, and on deep palpation below the left ribs. His skin was dry and harsh, but fairly pliable. It was, with the exception of the face, hands, and feet, stained of a medium walnut-brown colour. The coloration consisted of two elements, a diffused uniform tint, mottled with a darker shade of brown. It was more evenly spread over the trunk than on the extremities. The colour, however, was continuous over the thighs and arms, but on the legs and forearms it was arranged in more or less rounded patches, having between them tracts of normal skin. He also had what I took to be a well marked attack of scabies, consisting of papules, vesicles, and pustules, over the hands and feet, forearms and legs. The appearance of the eruption and its localisation in the clefts of the fingers and the dorsum of the foot appeared to me to be quite characteristic of its nature. There was no pigmentation of the mucous membrane of the mouth, gums, nor pharynx. A thin section of the superficial part of the skin revealed abundance of pigment in the epithelial cells, but no fungus.

Except that the scabies had yielded to treatment with sulphur, the above description applied equally as well to his condition after he had been a month in the Hospital as on his admission. There was a considerable amount of pruritus

of the trunk and extremities. A patch of skin on each side of the chest was well treated with a saturated solution of hyposulphite of soda, but without any effect. Further, to remove another possible cause he was ordered strong alkaline baths for a month. He took them at first every night, and then every other night, until his skin became so sore that they had to be discontinued. This treatment relieved the pruritus, and we thought at first diminished the coloration; perhaps it did so slightly, but the difference in colour on leaving the Hospital from that on his admission was scarcely noticeable.

What was the nature of the disease I am at a loss to say, but the possibility that it was attributable to the scratching due to the irritation of the scabies seemed to be negatived, both by the consideration that the limits of pigmentation far exceeded those of this supposed cause, and also because he could not have been suffering from this disease all the time of the pigmentation; for no affection of the skin appeared until two months after he had started on his voyage, and it was almost, if not quite, certain that the treatment at Newcastle would have cured it, especially taking in consideration the fact that it rapidly got well under treatment by sulphur ointment at the Seamen's Hospital. The scabies was probably an intercurrent attack contracted long after the onset of the discoloration.

The attack of intermittent fever was altogether too slight and transient to cause it, for it is only in severe and protracted cases that intense pigmentation such as this is met with. Further, he had neither enlargement of the liver nor spleen.

In opposition to the possibility that it was due to dirt and phtheiriasis, were the facts, that nothing of the sort was obvious on his admission to Greenwich, and that a prolonged course of strong alkaline baths had little or no effect.

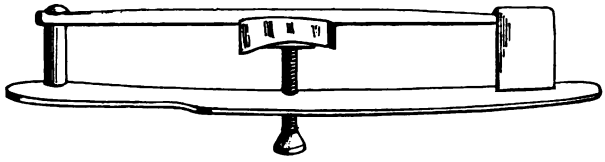
Finally, it appeared certain that the patient was not the subject of melasma supra-renale.

The disease was probably an anomalous affection allied to the closely similar case exhibited by Dr. Radcliffe Crocker the same evening; and it was somewhat remarkable that there were many points in the history of both cases almost absolutely identical.

XXXIV.—*Cases of Varix treated by a new instrument for obliterating the Veins.* By J. R. A. Douglas. *Read March* 25, 1881. *Communicated by* J. Rouse.

THE following selected cases of varix have been operated on by my partner, Henry Bullock, and myself during the last few months.

Police Constable George Warren, of Hounslow, æt. 43, 13 years service, was ordered by the Chief Surgeon when seen at Scotland Yard to be operated on by me; having suffered great weakness and cramping pains of right leg, which unfitted him for duty. I found an enormously distended vein on the thigh with engorged veins below knee. I applied two brooches under thigh vein, and divided it two days after, subcutaneously. Within three weeks the man was fit for duty and



had no bad symptoms, nor has he suffered since, although frequently up to his knees in snow at night. He states he has not had such comfort for years.

Police Constable William Dolton, æt. 38, 13 years service in police, had diffused varix below knee for six years, had ulcerated leg twice, had been six months on sick list for same. The Chief Surgeon ordered the operation. The saphena vein inside and under knee was very large and full, below it a large bunch of varicose veins, and an open ulcer just above ankle. Passed one brooch under big vein, but did not divide it. The ulcer healed during the time he was on his bed, and he soon resumed duty quite well. This man has been much exposed during the late inclement weather. The vein being deep, the patient being stout, it was well grasped not to implicate much skin. There is no mark of operation.

Michael Harrigan, a powerful bricklayer, living near Sloane Street, Brompton, presented himself as a militia recruit at the Assembly Station, London. I found he had a large varicose saphena vein inside and below knee, there was

also a bunch below that, and he was rejected in consequence. I offered to operate on him at his own house, and did so with one brooch, desiring him to keep quiet, when he would be fit for service. Two days after I went to see him, but he was not at home, and I did not catch him until the tenth day, when he came home as I was waiting, he having a black eye. I removed the brooch which he had been constantly walking about with. The varix had disappeared. This evidences the little pain and irritation caused by this simple operation. He was accepted for the Militia thirteen days after the operation.

Mr. John——, of Hounslow, æt. 40, a private patient, was operated on this month. Had varix six years with weakness and cramp, and cold extremities; there was an ulcer above ankle, engorged vein under knee, large bunch below. Henry Bullock had the saphena vein well grasped by an assistant, and passed the grooved needle of a horn brooch behind it, the rubber pad pressing tightly on the vein. The operation did not take a minute; the brooch was removed the fifth day, and the varix had disappeared. The ulcer is now quite healed; there was no constitutional or local disturbance.

The last case is one of varicocele in Private Primrose, a soldier of the 18th Hussars, whom I found left by his regiment in the Hounslow Station Hospital, having that day been permanently invalided by Surgeon-General Holton who has charge of the Home District, and came from Woolwich to invalid patients. On my asking if I might operate he was kind enough to say I might do so as often as I pleased at the Station Hospital, with the consent of the surgeon in charge. Primrose had a long pendulous varicocele of left side, quite preventing him from riding, and unfitting him for service dismounted. Henry Bullock grasped the bunch of veins, not to implicate too much scrotum, and in the presence of two army surgeons I passed two horn and spring brooches behind the veins, as I thought of dividing them, but did not do so. On the seventh day I removed one brooch, and the following day Dr. Gunning, the army-surgeon in charge, removed the second. Primrose left Hospital as soon as his invaliding papers arrived, and so perfectly cured that Dr. Gunning stated he would re-attest him if he was otherwise fit for service, had he enlisted again.

These cases were operated on with instruments called vein brooches, some of which are on the table, and which were invented by me. From their easy application, which is almost painless, I think all surgeons will appreciate their value in

many cases of venous mischief. From the way they have been received by Sir William Muir, the Director-General, and others of the A.M.D., they will doubtless be used in the army as well as in private practice. It has been found that the finest army recruits are rejected for the above diseases even in an incipient form, as they unfit them for service in the relaxing climate of India. The present method of obliterating varicose veins with the twisted wire and silk suture is extremely painful from the torsion of the vein and integument, often causing intense nervous irritation.

Veins bear however much more injury than they are nowadays subjected to.

There are possibly some in this room who remember the days of regular venesection, when the lower class were blooded nearly as often as they were shaved, and the ladies had the left sleeve of their night-dress made larger than the right to enable the surgeon to get at the vein. When a branch got obliterated by frequent laceration another was soon found in the bend of the other arm, and it was indeed rare that any inflammation resulted from the wound.

Surface veins, and these are the ones that become varicose, as their valves are not supported by internal tissues, bear a great amount of pressure without injury, as is evidenced by the constricted garter, to obviate which Sir William Muir, the present Director-General, invented an elastic band for soldiers; and by the pressure of the tight glove over the wrist, and the tight boot over instep, both arresting circulation in the surface veins without injury.

I can describe the vein brooches as being formed of a stout sharp grooved needle that passes under the vein in the leg or thigh, and under the bunch of veins in the scrotum, and is rivetted at the eye end to a strip of clear horn or steel like a spatula. The point of the needle is secured at the sharp end, after passing under the vein, to the other end of the horn or steel by a catch like a brooch or safety pin. No *pressure* is made on the skin except directly over the vein by an adjustable rubber pad. (See fig. on p. 160.)

The integument can be seen through the horn. To prevent buckling by the heat of skin, and to increase pressure where division of vein is determined on, a steel spring, flat like the horn, is added to its surface, easily removable.

There is a diversity of opinion as to the necessity of dividing the vein. The late President of the Society, Mr. Prescott Hewett, and Sir James Paget with many others,

consider it seldom requisite. Others divide, in nearly all cases. I do not often divide, and consequently use only one brooch, excepting in the case of large varicose veins of the thigh, and sometimes in varicocele where time is of importance; then two brooches or more are used, and they can generally be removed the following day, but where there is no division, the brooch remains without discomfort for a week or eight days. I divide varicocele with a blunt-pointed pair of scissors. This latter disease is much aggravated in the cavalry, as the soldier must not rise in his stirrups; and the position of the body on the bicycle aggravates if it does not produce both diseases, where there is venous valvular weakness.

XXXV.—*Extirpation of the Larynx and removal of a large growth which originally affected the ventricular band and vocal cord, but which subsequently involved the whole Larynx.* By THOS. WHIPHAM, M.B., and T. PICKERING PICK. *Read March* 25, 1881.

Notes by Dr. Whipham.

WILLIAM G., æt., 39, commercial traveller, consulted me on May 27, 1876, on account of huskiness and frequent desire 'to clear the throat.'

His family history was good.

The patient was a slight delicate looking man, but he had always enjoyed good health.

In January 1876, huskiness and frequent desire to scrape the throat came on suddenly, and without apparent cause; he had not been previously liable to throat affection, nor could he recollect that he had taken cold, either before or at the time.

He had experienced no pain in the larynx, but stated that he had of late been liable to erratic pains in the muscles of the right side of the neck, and that the huskiness and muscular pain troubled him more when his attention was not diverted by his occupation.

As a commercial traveller, much strain was thrown upon the voice, inasmuch as great persuasive powers were often necessary to induce his customers to buy his goods.

There was no history of syphilis, and at the above date

there was no external swelling in the neck; respiration was natural. The patient was extremely nervous, and on this account was very intolerant of the laryngeal mirror. It was not, therefore, until June 8 that I could obtain any view of the larynx. A warty growth rather larger than a pea was then seen, growing apparently from the anterior third of the left ventricular band and partly also from the vocal cord. It now became necessary to educate the patient with a view to removal of the tumour, and on July 29 this was so far accomplished that I was able to remove two small pieces with the evulsion forceps.

The huskiness was very greatly relieved, and he could carry on his occupation with ease and comfort. His circumstances, however, prevented him from relinquishing a calling which entailed so much use of the voice.

Early in September, I again examined the larynx, and found that the anterior three-fourths of the left vocal cord were red and swollen, but the warty appearance was absent; the voice was slightly husky. No operative interference was deemed necessary.

From this date until February, 1877, the laryngeal appearances remained unaltered, but the patient suffered greatly from dyspepsia, with fits of great depression, vertigo, and irregularity of the bowels. Examination with the laryngoscope at the end of February showed that the warty condition had recurred in the same situation, and on March 3, one large piece and two smaller portions were removed with the forceps. The microscopic appearances at this time were those of ordinary papilloma.

Again great relief to the symptoms followed, and I saw him once or twice after the operation; the vocal cord was then thickened but was free from warty growth, and the voice was fairly resonant.

By June 16, the growth had again increased, and a small piece was removed.

By January 5, 1878, considerable increase had again taken place; one large piece and two small masses were removed, and the whole of the warty portion appeared to have been taken away, leaving the vocal cord thick and somewhat red. About the beginning of February, he complained of pain and aching in the neck and shoulders; this pain was induced and increased if he talked much, and its seat was evidently in the muscles of the neck.

On March 23, it was found necessary to remove the

warty excrescences which had grown since the last operation. This was to a certain extent satisfactorily accomplished, but a sessile tumour with a broad base remained attached to the vocal cord, and partly to the ventricular band, after the evulsion of the prominent portions of the growth.

On April 19, another portion was removed, and after this date the patient gave up his work as a commercial traveller, and took to a business in which there was but little necessity for conversation. Considerable improvement was the result of this change, and the tumour increased less rapidly, and it was not until Dec. 31 that any operation was required. A piece of about the size of a pea was then taken away. The thickening of the cord and ventricular band was, however, at this time very considerable; before evulsion respiration was somewhat impeded with a certain amount of stridor on deep inspiration, and the lips had become decidedly blue. Early in 1879 the patient caught cold, and laryngitis followed. The inflammation persisted. On March 18, Dr. Whistler kindly examined his throat, and reported to me that he saw no reason to suppose that the tumour, which now involved both the ventricular band and vocal cord, was other than a benign growth.

The man was then sent into St. George's, and remained there for six weeks, by the end of which time the laryngitis had subsided to a great extent, but not sufficiently to allow of any attempt at removal of the growth. He left the hospital tolerably comfortable, but with a very husky voice. On June 23 he came to see me in consequence of a severe attack of dyspnœa and orthopnœa during the previous night. The growth was now of great size, and, unless he remained quiet, seriously interfered with respiration. He told me that he had of late had tenderness over the left ala of the thyroid cartilage with considerable swelling. Much of the swelling had now subsided, but a small hard painless tumour remained in the situation indicated.

The patient was again sent into hospital, and in the course of the following six weeks several pieces of the tumour were taken from the larynx. On Oct. 10, a piece of considerable size was removed, with great relief to the patient, who said he had not felt so comfortable in the throat since his illness, and I saw no more of him until Feb. 12, 1880, when he reported that his voice became more husky about a fortnight previously. The larynx was congested generally, and there was a nodule of the growth of about the size of

an Egyptian lentil, projecting from the free surface of the left vocal cord, and therefore interfering very materially with the approximation of the cords. The larynx was too much congested to render operation prudent.

By March 4, considerable alteration had taken place in the condition of the parts. The growth now appeared to involve the whole of the left ventricular band, and it had moreover lost its warty character; the man suffered (urgently at times) from dyspnœa on exertion. A few days later, I removed a nodule which projected between the cords near their junction anteriorly. This was examined microscopically, and found to be papilloma. The left ala of the thyroid cartilage was at this time pushed outwards (evidently by the growth), and was tender. The general tumefaction of the left ventricular band and vocal cord had increased greatly by the end of April; while at the same time the dyspnœa became more and more urgent. The patient was therefore again admitted into St. George's, and on May 1, Mr. Pick performed tracheotomy, from which operation he recovered perfectly, without a bad symptom, and left the hospital in the course of a week or two, wearing a tube.

On July 23, I again saw W. G., and found the larynx entirely blocked by a white semi-transparent mass. Inspiration was impossible save through the tube. A round mass could be felt below the cricoid cartilage on the left side, and from the patient's account there was often spasmodic contraction of the muscles on this side of the neck.

On Oct. 16, the larynx was greatly distorted by the new growth, which apparently involved the ventricular bands chiefly, in consequence of which no view of the vocal cords was obtained. The left side of larynx with the arytænoid cartilage was immovable in complete adduction. There did not appear to be any great increase in the external swelling.

In the early part of November some bleeding occurred through the tube once or twice when he coughed. The man looked worn and depressed; his health was evidently suffering, and on Dec. 30, 1880, he was again admitted into hospital, with a view of some radical operation at the hands of the surgeon for the removal of the disease.

So far as operation by the endolaryngeal method is concerned, but little remains to be said in this case.

The growth was situated towards the anterior part of the larynx, and as the patient was at first extremely nervous, evulsion was attended with much difficulty. Eventually, however, he became tolerant of the laryngeal mirror, and

accustomed to the forceps, and the later operations *per vias naturales* were comparatively easy.

With regard to the growth itself, there are several points of interest. Those portions which were microscopically examined prior to the tracheotomy on May 1, 1880, had for the most part the appearance of papilloma, while that removed at the time of the extirpation was undoubtedly epithelioma. After this operation a careful comparison was made of the mass then removed, with portions previously taken away with the forceps, and it was found that parts of the section of a piece removed in 1876 bore some resemblance to epithelial growth.

The tumour, so far as one could judge by laryngoscopic examination, was for three years an innocent growth, and it was at the end of this time that Dr. Whistler was good enough to examine the patient. His opinion then was to the effect that he saw no reason to suppose that it was other than a benign growth.

Shortly afterwards, however, the clinical aspect of the case changed, and certain definite facts, such as the alteration in the shape of the thyroid cartilage, the tenderness, and the swelling, indicated that the growth had assumed a malignant character.

'The site of the tumour is in most cases one of the ventricular bands, but in some instances one of the vocal cords,' &c. (Mackenzie, 'Diseases of the Throat and Nose,' p. 336.)

The present is a case in point, though the disease subsequently involved both ventricular bands and other parts of the larynx.

The duration of the disease (four years) is suggestive of innocency of the growth in its earlier stages. Fauvel, however, in his late work,* states that in seven cases of epithelioma of the larynx in which tracheotomy was performed, the patient lived on an average four years; while in six cases in which the operation was not performed, the average duration was one year and eleven months.

After the tracheotomy in May 1880, the rapidity of the growth, and the distortion of the larynx were suggestive of an alteration in the character of the disease, and the diagnosis of epithelioma was confirmed by the repeated and copious attacks of hæmorrhage, which occurred shortly before the extirpation of the larynx.

One could not divest oneself of the hope, however, that

[1] *Traité pratique des Maladies du Larynx*, ch. ix. p. 717.

as the disease was limited to the larynx, extirpation might be the means of prolonging the patient's life for a time.

Continuation of Case by Mr. Pick.

I first saw the patient, William G——, on May 1, 1880, when I was requested by Dr. Whipham to perform tracheotomy. At that time there was considerable dyspnœa, which occasionally became urgent. On the evening of the day previous to that on which I first saw him, there had been a severe paroxysm, which appeared to threaten immediate suffocation.

Upon examination, the left ala of the thyroid cartilage seemed to be fuller and more prominent than natural, and was tender to the touch. About its centre was a small, distinctly circumscribed, somewhat lobulated mass, about the size of a small bean, which was believed to be a portion of the growth protruding through a perforation in the cartilage. I proposed to open the trachea at once, and as soon as he had recovered from this operation to perform thyrotomy, and if necessary to remove the left ala of the thyroid cartilage. Tracheotomy was accordingly performed, and the man recovered without a bad symptom. He was so much relieved by this operation, and seemed so averse to any further surgical interference, that he was sent to the Convalescent Hospital at Wimbledon for a time, with instructions to return to St. George's. He did not, however, present himself to me, and I did not see him again till January 13 of the present year. The man's condition had materially altered for the worse. He was thin and emaciated, his expression anxious, and his complexion sallow. During the day or two previous to my seeing him he had lost a considerable quantity of blood, which he had coughed up through the tube. He breathed entirely through the artificial opening, his voice was reduced almost to a whisper, and he could only articulate a few words at a time, after placing his finger over the tube, as difficulty in breathing immediately supervened. Upon examination of the throat a large lobulated mass was felt occupying the position of the left ala of the thyroid cartilage. This mass overlapped to a slight extent the right side of the median line, and extended backwards as far as the finger could reach, apparently encroaching on the posterior wall of the pharynx. The enlargement extended below to a level with the cricoid cartilage. The hyoid bone could be felt above the disease, and appeared to be natural.

The man's condition was serious. It was clear that he could not live long in his present state, that the hæmorrhage would recur, and that he must speedily sink unless some attempt were made to thoroughly remove the growth. Accordingly, after consultation, the operation of extirpation of the larynx was determined upon.

On January 16, 1881, ether having been administered, the tracheotomy tube was withdrawn, and the opening into the trachea slightly enlarged, both upwards and downwards. Dr. Felix Semon's modification of Trendelenburgh's tampon-cannula was introduced, and inflated.* The patient during the remainder of the operation was kept under the influence of ether by means of Dr. Semon's apparatus. An incision 2½ inches in length, was made in the median line of the neck, from the lower border of the hyoid bone, nearly as low as the original tracheotomy wound, and a second incision at right angles to it, across the middle of the thyroid cartilage. The flaps of skin and cellular tissue thus formed were dissected back, and the surface of the growth freely exposed. It appeared to involve only the left ala of the thyroid cartilage externally; the right ala being natural and presenting no appearance of morbid tissue. The thyroid cartilage was now divided vertically in the median line, and the two halves separated from each other. The whole of the interior of the larynx was found to be choked with the new growth.

The left ala of the thyroid cartilage was seized with a vulsellum, and the thyro-hyoid membrane divided with a pair of curved scissors until the superior cornu of the cartilage was reached; this was then cut through about its centre. The crico-thyroid membrane was similarly treated, and the inferior cornu divided. A few touches severed the structures attached to the posterior border, and the left half of the cartilage was removed. The right half was treated in a similar manner. The cricoid, with the remains of the arytœnoids and other cartilages, was then freed from its attachments by dividing the membrane which connected it to the first ring of the trachea, and the structures which attached it to the pharynx behind. Finally the epiglottis, which was found to be implicated in the disease, was removed.

There was now a large cavity in the front of the neck, at the bottom of which could be seen the posterior wall of the

* Dr. Semon was present at the operation, and kindly gave me the benefit of his advice as to the management of the tampon-cannula.

pharynx covered by mucous membrane. The wound was carefully explored, and any parts which looked suspicious or presented traces of diseased structure were removed. Two or three small vessels were wounded, and the bleeding was temporarily arrested by clips. No vessel required a ligature. The wound was plugged with sponges, and two sutures were passed through the extremities of the transverse incisions. The operation occupied about three-quarters of an hour; at its close the patient was not much exhausted, and had a fair pulse. The 'tampon-cannula' appeared to have fulfilled its purpose admirably. The patient breathed through it comfortably and little or no blood found its way into the air passages. It was allowed to remain in the trachea.

Shortly after the operation there was some slight hæmorrhage, which was arrested by the introduction of another sponge into the wound.

He was ordered as an enema every four hours:

Brandy ℥ij.
Beef Tea ℥ij.
An Egg.
Tinc. Opii ♏xx.
Liq. Pancreaticus ʒij.

Jan. 17.—On the following day it was reported that he had passed a quiet night. The temperature was 99·2°F. the pulse 124. The wound looked quiet, and there was no further bleeding. The breathing was quiet and easy, and the skin natural.

Jan. 18 (second day after operation).—He had slept fairly well. Some foul blood-stained serum was oozing from the wound, which looked quiet. The temperature was 101°F., pulse 140. The sponges were removed.

Jan. 19 (third day after operation).—Had passed a quiet night. There was considerable foul sanious discharge from the wound. The temperature, which on the evening before had risen to 103·2°F., was 99·2°F. He expressed himself as feeling comfortable, but hungry. Skin hot and dry. Pulse 142. A No. 12 gum elastic prostatic catheter was passed from the wound into the stomach, and a pint of beef tea, an egg and 1½ ounces of brandy injected. He was ordered to be fed in a similar way three times a day.

Jan. 20.—On the morning of the fourth day after the operation, his temperature, which had again risen to 102·6° the night before, was 99·5°F. He had passed a quiet night,

dozing at intervals. Pulse was 148. The wound was looking quiet. About noon he complained of severe pain about the ensiform cartilage, which he attributed to flatus. His aspect at once changed; his face became pinched; his eyes sunken, and his general expression betokened great anxiety. From this time he rapidly became more and more exhausted, and died at 8 o'clock on the morning of the 21st (the fifth day after the operation), without presenting any definite symptoms. His exhausted condition after the occurrence of the pain prevented any careful examination being made.

At the autopsy, 33 hours after death, the following appearances were noted.

The body was much emaciated.

A small portion of the growth was found below the seat of the operation.

There was no sign of inflammation about the wound, or in the planes of the neck, nor was there any blood in the air passages.

Chest.—The right pleura was coated with recent lymph, and both lungs were emphysematous.

Both layers of the pericardium were thickly coated with soft shaggy lymph, and the sac contained a little turbid fluid.

The ventricles of the heart were firmly contracted: a few thickened patches were found on the mitral valve. The organ weighed 9 oz.

The *liver* was natural.

The *spleen* weighed 6 oz., and was diffluent.

The *kidneys* weighed 11 oz., and were natural.

A question naturally arises as to the cause of the pleurisy and pericarditis found at the autopsy. Most careful examination was made as to the condition of the parts in proximity to the wound, but no inflammatory process in any of the tissues surrounding it was evident. It seems improbable, therefore, that the affection of the two serous sacs could have been the result of downward extension of the inflammation. In the absence of any other apparent cause, pyæmia would afford a probable explanation of the inflammation of the pleura and pericardium, although the ordinary symptoms of blood poisoning were not manifest during life.

The operation of extirpation of the larynx has now become a recognised one in surgery. Cases have been recorded,

and others are constantly occurring, either of partial or complete removal. The most common cause for which this operation is required is carcinoma, and in these cases, even when the operation is successful, a recurrence of the disease must be generally expected; so that the proceeding can only be regarded as one which will prolong life for some few months. Thus out of the nineteen cases tabulated by Dr. Morell Mackenzie of extirpation of the larynx, sixteen were for some form of cancer; of these, seven died from the effects of the operation, and one died at the end of six weeks from pericarditis, resulting from the passage of a bougie into the mediastinum, which had been introduced for the purpose of dilating the œsophagus. Of the eight cases which may be said to have recovered from the operation, recurrence of the disease occurred within a very short period in seven. In the remaining case there had been no return of the disease after a period of seven months; but it is probable that in this case no long time would elapse before the morbid growth would again appear.

Another class of cases for which extirpation of the larynx has been performed, is for sarcomatous disease, and it is in these cases that the operation, according to Schüller, is 'especially indicated.' In the two cases recorded in Mackenzie's tables, one was entirely free from a recurrence of the disease more than three years after the operation, and was enabled to undergo considerable exertion as an agricultural labourer, and also while acting as postman between Miazzina and Trabaro. The other case also had no return of the disease during the eighteen months that he lived after the removal of his larynx. He died eventually of tracheal and pulmonary phthisis.

Still it must be borne in mind that sarcomata are to be classed among the malignant tumours, employing the term in its clinical signification, that is to say, that when removed they have a tendency to return, especially when the sarcoma, as in the two cases alluded to above, is of the spindle-celled variety. It is probable, therefore, that as our experience of extirpation of the larynx for sarcomatous tumours increases, we shall find that they have, like the carcinomata, a great tendency to recur.

In the case, however, which forms the subject of these remarks, we had, at all events, in the first instance, an apparently innocent growth. The papillomata, though they may prove fatal from continuous ulceration and repeated

hæmorrhage, are classed among the non-malignant tumours, and have no such tendency to recur if thoroughly removed. The case in its earlier stages was undoubtedly one of papilloma, as was abundantly proved by repeated microscopic examinations of the portions of growth which were removed by evulsion, and it was therefore believed that if the tumour could be thoroughly and successively eradicated, we might hold out to the patient the hope of relief from his disease. Previously to the operation, however, I expressed a doubt as to whether the morbid growth had not altered in character; whether, in fact, the papilloma had not assumed the character of epithelioma. I was led to this opinion by the unusual course which the growth had assumed, supposing it to have remained an innocent tumour, in perforating and apparently partially destroying the thyroid cartilage. The great rapidity of the growth during the last few months of his life, the somewhat rapid emaciation, the sallow hue of the face, the anxious and careworn expression, also seemed to point to some change in the nature of the tumour. And such indeed proved to be the case. Microscopic examination of portions of the growth removed at the time of the extirpation, left no room to doubt that the disease had assumed a malignant type. It is interesting, however, to note that though the growth was now epitheliomatous in character, it still to a great extent retained the naked eye appearances of papilloma, presenting that peculiarly branched or villous appearance which is so characteristic of the disease. So that after the operation, and prior to the microscopic examination, I was almost induced to hope, in spite of the history of the later period of the case, that we should still find that the tumour was innocent in its nature.

In reviewing this case, one cannot but regret that the operation was not performed earlier. Even if it had been done eight months sooner, at the time of the tracheotomy, there is a great probability that we should have had to record a more favourable termination. The patient was at that time in a much better condition to withstand the effects of a serious operation, and the amount of disease to be removed was small, when compared with that found at the time of the extirpation of the larynx. But the man, after the trachea had been opened, was so comfortable, and so averse to any further operative interference, that one rather shrank from urging him to undergo an operation which terminates fatally in at least fifty per cent., and which at

the best leaves the sufferer in a sadly mutilated condition; possibly deprived of the power of swallowing, and obliged to resort to the introduction of a tube into his stomach whenever he requires nourishment; deprived also for the most part of the powers of speech; and entirely dependent upon artificial vocal apparatus. As Dr. Morell Mackenzie has well said, 'This operation should only be undertaken at the immediate request of the patient, after the subject has been fully explained to him in all its bearings.' With regard to the operation itself, there is but little to be said. This particular case presented no great difficulty, very little blood was lost, and no vessel required ligature. It certainly did not illustrate Dr. Paul Koch's statement that, 'the skill of the surgeon is, in some cases, shown by the patient not dying under his knife.' It seems to me that it is preferable in these cases to divide the cartilages in the middle line, and remove each half separately, than to adopt the plan advocated and practised by Dr. Foulis, of removing the larynx entire, by dividing it from its attachments to the trachea below, and thus dissecting it from below upwards. In the first place, by incising the cartilages in the median line, and separating them widely from each other, the surgeon obtains a good view of the interior of the larynx, and can ascertain at an early period of the operation the extent of the disease. Secondly, there appears to be less risk of wounding important structures. By severing the tissues which connect it to the hyoid bone above, and the trachea below, after the cartilages have been divided in the middle line, the larynx is separated from all but its posterior connections, that is to say those which are in close relationship to the large vessels and nerves of the neck, and to avoid which the greatest care is required on the part of the operator. Being free, however, in every other direction, the half of the larynx can be drawn well forwards, away from these structures, and then severed from surrounding parts without any risk or danger. In spite of every care at the time of the operation, it was found at the post-mortem examination that some slight amount of the disease had been left behind. There can be no doubt, therefore, that had this poor fellow lived he would have had a recurrence of the disease at no distant period. Another reason for regret that the operation was not sooner undertaken, is that undoubtedly at an earlier period of the case the disease could have been thoroughly eradicated.

XXXVI.—*A Case of Intracranial Disease involving the 3rd, 4th, 5th, 6th, and 7th Cranial Nerves, and perhaps the 1st and 2nd.* By W. SPENCER WATSON. *Read March* 25, 1881.

MARY F——, a married woman, æt. 36 years, came under my care at the South London Ophthalmic Hospital on December 3, 1880, for paralytic ptosis and severe facial neuralgia of the left side.

The following history was taken by my clinical assistant, Mr. Payne. Mary F. had had six children, five of whom have died, and three miscarriages. The deaths indicated no suspicion of being due to syphilis, but there was a miscarriage seven months ago in the second month of pregnancy, no cause for which could be given. A severe confinement with flooding occurred eighteen months ago. She had had no decided secondary symptoms, but eight months ago had what is presumed to have been periostitis of the tibia, from which she recovered under treatment at St. Thomas's Hospital. As the leg got well she began to suffer from severe shooting pain about the junction of the left parietal and frontal bones over an area of about two inches in diameter, which has continued up to the date of admission (December 3, 1880), and there is now constant pain extending from the left ear into the left cheek. This pain commenced two or three weeks after the beginning of the head affection. About a fortnight ago the left upper eyelid drooped, and is now completely paralysed, but she has noticed double vision for the last two months. Four months ago she had nine teeth extracted from the left upper jaw (only three of which were decayed), but without getting any relief from the neuralgia.

Present Condition (Dec. 3).—There is no sensation in the course of the lachrymal, supraorbital, infratrochlear, or infraorbital branches of the fifth. Sensation is much impaired over the region supplied by the third division of the fifth. The left side of the tongue is furred, and devoid of sensation except at the tips. The left angle of the mouth has the appearance of being drawn up, but this is due to the falling in of the cheek where the teeth have been extracted, the muscles of the cheek being unaffected. There is no movement of the

eyeball. The tension of the eyeball is normal. With the left eye the patient can barely count fingers. Ophthalmoscopic examination of this eye shows the retinal veins to be much larger than those in the right eye, the sight of which is perfect. There is some amount of defective hearing on the left side, a watch being heard only at the distance of about one inch, while it can be heard at a distance of about fourteen inches from the right ear. At one time there was a discharge (never offensive) from the left ear, but this has ceased within the last week. Taste and smell are entirely lost. The woman looks haggard and depressed, and attributes this to her constant pain and want of sleep.

Dec. 3.—Looking upon the case as probably one of intracranial syphilitic nodal swelling involving the temporo-sphenoidal region, I prescribed 15 grains of iodide of potassium twice a day, and an ointment of morphia and glycerine to be rubbed into the side of the face, temple and forehead.

Dec. 10.—The condition being about the same, the dose of iodide was increased to 20 grains three times a day. The whole of the left side of the head and face to be constantly covered with cotton wool.

After this date a decided improvement in all the symptoms began, and on December 20 the patient reported that for three or four nights she had slept more than she had ever done since the beginning of her illness eight months before. Her appetite had also improved, and there was some slight movement in the upper eyelid. Still, however, no movement of the eyeball or pupil.

Jan. 3, 1880.—The iodide was continued (60 grains a day) up to this date. There has been no return of the pain, but the eyelid and cheek are now puffy, and the woman says she feels ill and as if suffering from a severe cold. This is evidently from iodism. The iodide was therefore discontinued, and a mixture of gentian and ammonia substituted.

Jan. 10.—No return of pain. The puffiness of face gone. Sensation has partly returned in the lower half of the cheek. The senses of smell, taste, and hearing are restored. There is also some power over the upper eyelid, and some upward and inward movements of the eyeballs. The vision of the left eye is even more defective than ever, and the pupil immovable.

Feb. 11.—The condition remained as at the last date till about a week ago, when she began a mixture containing

iodide of potassium and bichloride of mercury. This caused sickness and vomiting, and much constitutional disturbance. The upper eyelid and eyeball have gained still more power of movement, and there is a still further improvement in the sensation in the cheek.

Feb. 18.—The neuralgic pain has returned during the last week, and the woman again looks haggard and depressed from loss of sleep. On ophthalmic examination the left vitreous is so turbid that no view of the fundus can be obtained. The right vitreous is also cloudy, and sensations of sparks of fire have been lately complained of in this eye. Iodide of potassium in eight-grain doses was again ordered, and morphia ($\frac{1}{6}$ grain) ordered at bedtime each night, the morphia ointment also being recommenced.

Feb. 21.—After putting atropine drops into both eyes, I found the left pupil quite unaffected by them, and in this eye only a faint reflex was seen by the ophthalmoscope, no details of the fundus being distinguishable. The right pupil dilated well, and the fundus oculi was normal. The pain in the cheek had returned, and was as severe as ever. There was also a sensation of 'tickling or creeping' in the face (formication?). There is now no discharge from the ear. Ordered to take three minims of liq. strychniæ twice daily.

March 7.—Since taking the strychnia the pain has been as severe as ever, and for several nights past the woman has taken three-grain doses of croton chloral, but without relief. I now returned to the iodide of potassium and carbonate of ammonia (ten grains of the former and three grains of the latter) three times a day.

March 10.—The iodide increased to fifteen grains for a dose. Pain less severe.

March 14.—Much less pain. Paralytic symptoms as before.

March 25.—No pain. Some increased sensation in the cheek. No sensation nor taste in the left half of the tongue. Eyeball and cornea devoid of common sensation, the left masseter and left temporal muscles scarcely act. The jaw when closed is slightly drawn over to the left.

Remarks.—The relief of pain with restoration of hearing and smell, while taking iodide of potassium in full doses, is a very prominent point in this case. Sixty grains a day were taken for a whole month, viz. from December 3 to January 3, so that if we suppose the medicine to have been taken regu-

larly during this time, the total amount of iodide consumed would be nearly four ounces by weight. The history of the case points pretty clearly to syphilis, but the mere fact of some of the symptoms having given way under treatment by iodide of potassium must not, I think, be relied on too much as evidence of a syphilitic origin of the mischief. The nerves affected seem to point to the middle fossa of the skull as the seat of the principal lesion.

XXXVII.—*Arterial Hæmatoma of Forearm; due (apparently) to Embolic Arteritis and consequent perforation.* By Rushton Parker, B.S. *Read April* 8, 1881.

THE patient was a lad named William Griffin, æt. 14, occupied as a smith, and admitted into the Liverpool Royal Infirmary on July 23, 1879.

At the age of 4 he had been successfully cut for stone in the bladder.

In the first three months of 1879 he was laid up with acute rheumatism, about a month after the onset of which he had shooting pains in the right forearm, followed by swelling there, and eventually of the whole limb.

The swelling subsided except in the front of the forearm, where it increased gradually up to the day of admission; on which a tumour was found, distending that part of the limb to about twice its ordinary size, at its naturally widest part; tapering up and down, firm, immovable, very slightly elastic.

He distinctly negatived any experience of pulsation at any time in the locality of the tumour. Aspiration being attempted with a large needle, yielded only a trifling quantity of firmly coagulated black blood, on the issue of which he related the occurrence of a similar attempt three weeks before with a like result.

Under ether, after the application of the rubber tube tourniquet, the limb was freely incised through the integuments and fasciæ, and between the muscles, beneath the deepest of which more than a pound of black clotted blood was found, and from thence removed.

On slackening the tourniquet profuse bleeding occurred, mainly from an artery on the side of which an upper and a

lower aperture could be seen, separated from each other ¼ or ⅜ inch, but connected by an intervening strip of arterial wall. The vessel had the size of a crow quill, and was evidently the anterior interosseous artery.

Ligatures of carbolised catgut were applied, that on the proximal side being placed without difficulty, but that on the distal only after repeated failures and great delay. Sutures and a capacious drainage tube were used, and the latter brought out at a separate opening through the skin, and between the flexor tendons. This tube was afterwards ascertained to be far too tightly inserted, to which circumstance I attribute the subsequent retention, extra inflammation, and their attendant consequences, including secondary hæmorrhage, to be presently related.

Frequent dressings were necessitated, the discharge being abundant, then purulent, and by the third day putrid. On re-opening the wound lymph was found abundantly exuded as well, and the temperature for these three days was between 101° and 102°. After this the constitutional symptoms disappeared, and in the wound things went on in what may briefly be called a moderately second-rate fashion, till the 20th day, between which and the 30th secondary hæmorrhage occurred six times, greatly reducing and blanching the patient.

Careful pluggings with benzoated oiled lint and bandaging (regulated so as to procure compression of the raw surface without arresting circulation altogether in the limb) having proved ineffectual, the wound was once more thoroughly searched under ether, but no point found to which a ligature could be applied. The hæmorrhage was a general ooze, and evidently, I think, of inflammatory origin. Turpentine was freely applied to the raw surface, and soaked into such lymph as was permitted to remain. The limb was kept raised, and ergotine given subcutaneously six times in two days. A splint was employed, and no further bleeding having occurred, boracic lint was applied to the wound, which healed rapidly, and a fortnight later had become a superficial granulating sore. The patient was now in a fair state of convalescence, but in the second half of the second month suffered attacks of dyspnœa and palpitation. Auscultation revealed what had in truth been discovered the day after his admission, namely a systolic and diastolic murmur indicating obstruction and regurgitation at the aortic valves. But he now, for the first time in hospital, showed attendant

symptoms of respiratory distress, with pain and tenderness in the region of the heart, a phase which at its onset was accompanied by epistaxis. Morphia had been administered from time to time all along, and now digitalis was added by the clinical assistants, with, as they thought, marked benefit; an impression which I can neither gainsay nor confirm, as the paroxysms for which it was given occurred always in my absence.

I afterwards placed the patient upon a systematic simple diet, consisting mainly of bread, butter, potatoes, tea and beef tea; having the bowels cleared by enemata of hot water; with a daily dose or two of opium, repeated whenever cardiac or respiratory oppression recurred; and a discontinuance of the digitalis.

These symptoms gradually and totally disappeared, and after six months in hospital he went home, being enjoined to confine himself to the diet above mentioned, and to avoid milk, flesh, and much bodily exertion.

The cardiac murmurs persisted many months, though without any attendant symptoms, and the wound remained soundly healed.

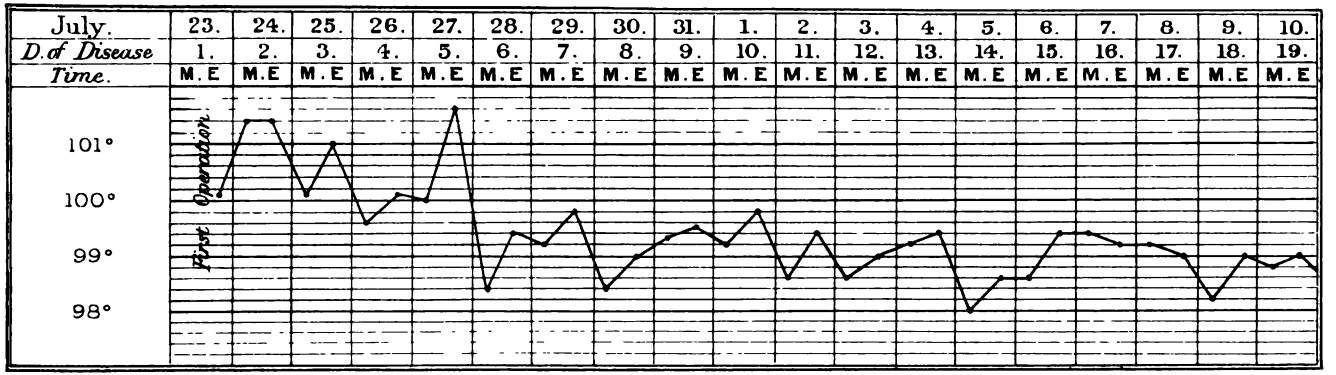
A splint was used until muscular power was properly balanced in the forearm; considerable impairment having resulted in the hand from partial severance of the median nerve above the wrist, in the final operation, at which the matted wound was extended.

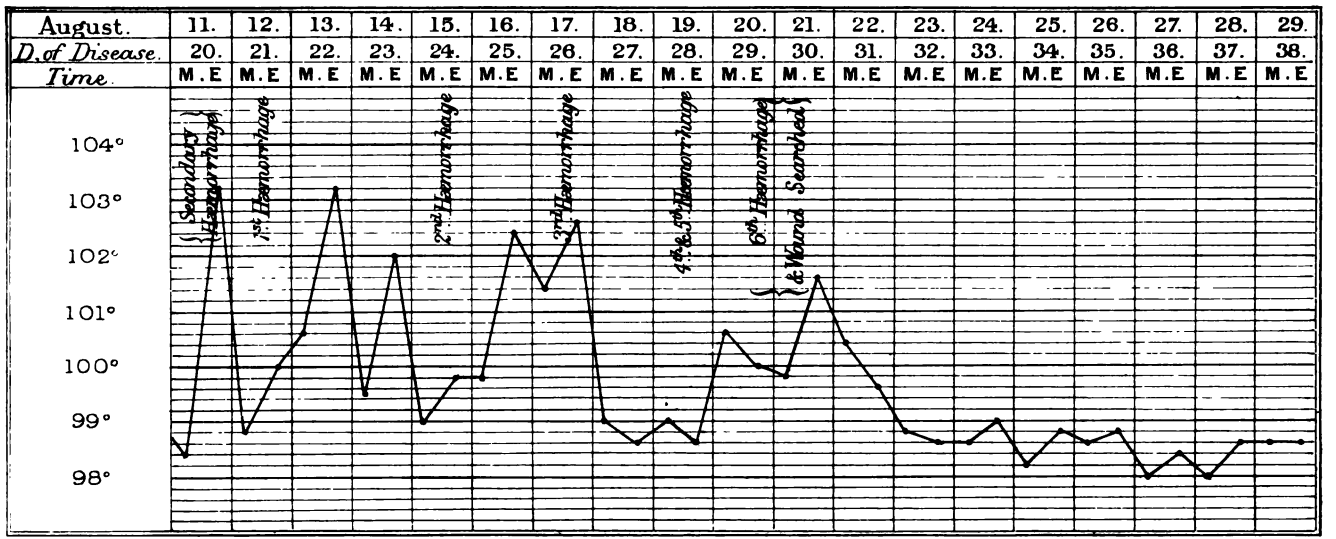
In February 1881, he appeared perfectly strong and well, without any cardiac murmur; able to do moderately hard work without hindrance to the respiratory or circulatory functions; with good use and all the most important movements of the hand, though the palmar muscles supplied by the median nerve have little or no power.

Remarks.—I have not called this case a diffuse aneurism on account of the absence of observed pulsation, the ascertained presence of which at some stage of analogous cases would appear to be the main, if not the sole reason, for ever admitting into a very distinct class of clinical phenomena a malady which previous to operation is always obscure, and often undistinguishable.

The progress of the wound I have but briefly related, presenting, as it did, a series of phenomena which are generally preventible, and most of which are little relevant to the main purpose of this communication.

But although it is unnecessary to dwell on every point





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illustrated by this case, much might be said, and characteristic examples quoted, in reference to the effects of intensified inflammation in promoting hæmorrhage from vessels that are themselves of insignificant size, when dilated and transmitting an excess of blood, in consequence of irritation in their vicinity; and conversely, when the relief of tension (to instance one form of irritation) is followed by immediate cessation of free bleeding, even though that relief be procured by the infliction of a fresh incision, tending, it might be supposed, rather to invite, than to restrain, hæmorrhage.

The defective drainage and septic influences here intensified the inflammation, which was itself a sufficient pathological cause of the repeated bleeding, by general oozing.

As soon as the blood tumour was discovered, by operation, to be due to single arterial hæmorrhage, the absence of a traumatic cause, and the ascertained presence of the conditions requisite for embolism, left little wanting to warrant a belief in the latter.

I venture, therefore, to attribute the perforation in the present instance to an embolus consisting of inflammatory exudation, derived probably from the aortic valves, impacted in the artery concerned, infecting by its contact and exciting inflammatory softening in the arterial wall, instead of producing mere occlusion as might be generally expected.

This notion was suggested at the time by Mr. Joseph Wiglesworth, one of the house surgeons, and communicated at the second visit before I had reflected at all on the case, and I can see no explanation that can be preferred to it. The only closely analogous case which I have succeeded in tracing is one related in Mr. Holmes' 'System of Surgery'; that is, so far as the limbs are concerned, for cases of cerebral hæmorrhage, due to intra-cranial embolism, are well enough known. I am indebted to Mr. A. C. Rich, formerly another house surgeon, for the full notes from which I have prepared this communication, which I have brought before the members of this Society, in order to have the advantage of their criticism and opinions.

XXXVIII.—*A Case of Meningocele.* By W. E. Steavenson, M.B. *Read April* 8, 1881.

ELIZA CALLABY, a female child, born November 14, 1880, was the last one of thirteen. She was about

three weeks old when first brought to the Children's Hospital. All the other children of the family were healthy except the seventh, who was born, according to the mother's account, without a back bone, and lived only ten days. The mother states that when she was three months gone with this child (Eliza), one of her sons died suddenly and was taken to the mortuary of St. Mary's Hospital, where she insisted on seeing him. She was very much affected, and had to be carried out. Immediately after the birth of this child the mother inquired whether there was anything wrong with it.

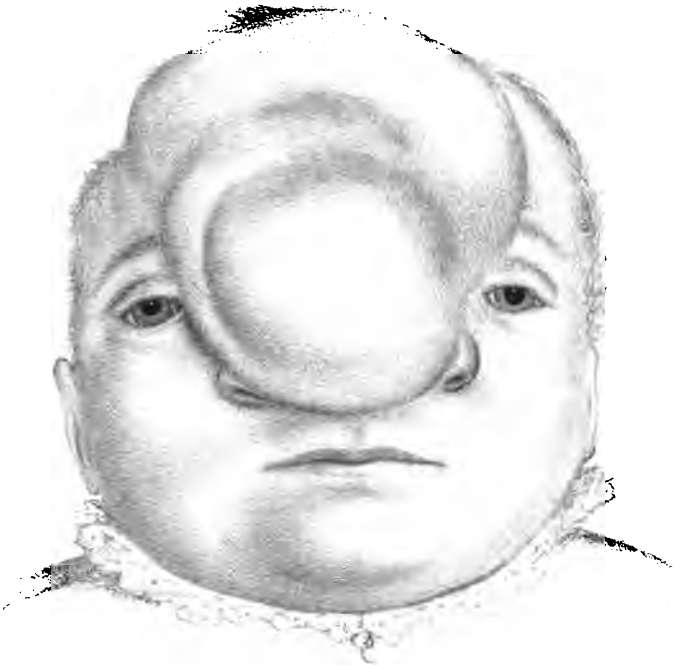
Dec. 8, 1880.—There is now a cleft in the cranial and facial bones extending from the posterior fontanelle to the front teeth. In the place of the nose, and in the centre of the face and forehead there is a swelling with two integumental bosses on it and a transverse imperfect cleft. The swelling communicates freely with the cranial cavity. A free impulse is produced by percussion. There is no cleft palate, but the soft palate seems depressed, and there is some difficulty in swallowing. There has always been a difficult and peculiar mode of respiration; the child catches its breath with a series of three or four short quick gasps, which are then followed by a pause. The heart is in its normal position, but the pulsations are accelerated.

The child was stronger at birth than now. She feeds badly, and is very thin. The swelling does not increase. The sketch of the child (see Plate VI.) was taken on December 11.

Very little opportunity has been afforded us since for observing the child; she was not admitted into the hospital, being under the age of two years, and no interference with the tumour was deemed advisable. She died at the age of four and a half months. There was no post-mortem examination. An application was made to the parents to allow a cast of the child's head to be taken, but permission was refused.

In thirty-nine recorded cases by Laurence, twenty-one were males and eighteen females. This child was a female.

The protrusion is generally at the occiput; out of seventy-nine recorded cases, fifty-three were in that position. In six instances the subject of the malformation reached the adult age; all the remaining cases died early.



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Mr. Steavenson's Case of Meningocele.

XXXIX.—*Case of Progressive Painful Inflammation of Arteries.* By JOHN H. MORGAN. *Read April* 8, 1881.

THE patient, G. W., æt. 46, has a good family history. At the age of 18 he contracted syphilis, which was followed by sore throat, and ulcerated sores on the legs and arms.

He is the subject of a curious enlargement of the superficial veins of the chest and abdomen which has existed since birth, and is probably due to some congenital malformation of the large veins near the heart.

He is married, and his wife has had seven children; five of them died of phthisis, the rest are healthy, and show no evidence of congenital disease. In 1872 he suffered from pain in the right leg with loss of power, and Dr. Cresswell of the Dowlais Ironworks, under whose care he then was, sent him to London to be under the charge of Dr. Wilks, who has described the case as follows in his work on 'Diseases of the Nervous System,' under the heading of 'Spasmodic Affections.'

'G. W., æt. 36, admitted into Stephen, June 19, for weakness of the leg, and left July 23, 1872.

'Patient stated that in March last he was seized with very acute pains through the left hip and groin, which gradually spread down the leg, and these pains were worse at night. Went to Swansea Hospital, where the knee became contracted and he took to crutches. He was then sent to Guy's Hospital. He was put to bed, being quite unable to walk on account of pains and weakness in the left leg. No local cause was discoverable to account for the symptoms; the leg was somewhat drawn up, it was perceptibly wasted, being smaller than the other, and sensations slightly impaired. On testing the limb the muscles were found to respond to both the faradaic and galvanic currents. He was then ordered the continuous current, to be applied daily to the front and back of the thigh. After the first application he expressed himself as having much relief from the pain, and in a few days it had altogether left him. At the same time the strength returned in the muscles, so that in a few days he could walk. The current was still applied with a daily improvement in the strength of his leg, so that on July

10th he was walking about, and on the 21st he sufficiently recovered to be able to leave the hospital convalescent and nearly well. Patient took no medicine.'

In 1876 he suffered from pain in the left armpit, which passed down to the bend of the elbow, and then left him.

He first came under my observation in 1877, when I succeeded to the care of Mr. Butlin's patients at the West London Hospital. He was then suffering from pain in the left arm, which was increased by pressure in the middle of the arm over the brachial artery. There was no swelling. He recovered from this attack, without taking any medicine, in a few weeks, the pain ceasing at the bend of the elbow. In 1880, soon after Christmas, he was attacked with sudden and severe pain in the right groin. This was deep-seated, and was made intense when the part was pressed. There was no history of any strain or injury, and there was no swelling. The area of pain was confined to two or three inches in the course of the femoral artery, and to one or two inches on either side of it. This area of pain gradually travelled downwards in the course of the vessel, until it reached a spot corresponding with the opening in the adductor magnus, and here the pain was more intense and diffused for two or three days. Gradually passing into the popliteal space, it remained there for some time, and the lymphatic gland in that position became enlarged. In time, however, it passed down into the leg, and then for the first time some œdema took place. This was, however, limited to the back and front of the leg, and to an area of a few inches above and below the seat of pain. No swelling of the foot took place, and the œdema travelled down with the pain to a little above the ankle.

Whilst still persisting in the right leg, he was attacked with similar symptoms in the right axilla, which followed the same course. Pain on pressure was sharp, and was felt directly the fingers perceived the pulsation of the artery. There was no swelling until it reached the middle of the arm, when there was again œdema confined to a few inches above and below the seat of pain. This attack spread down into the radial and ulnar arteries, and ceased at the wrist.

In May it was noted that the radial and ulnar arteries were felt to beat forcibly at the wrist, but there was no swelling of the hand or fingers, and œdema was confined entirely to the middle of the forearm, where pain was perceived. The gland behind the elbow was slightly enlarged

and painful, and there was no evidence that the calibre of the vessel was diminished, but the tenderness had entirely left the course of the brachial artery.

During the five months that these symptoms had been observed the patient had been treated with iodide of potassium, at first in small and afterwards in large doses. This not seeming to benefit, he took for some time the biniodide of mercury with iron, but no effect was produced on the course of his symptoms. Local sedatives gave relief to pain, and morphia relieved him so far that he was enabled to sleep. The pain was worse at night. In order to watch him more closely he was admitted into the hospital, but beyond noticing that the pain seemed quite as severe as it was represented, no fresh facts were observed.

Whilst still an in-patient he was attacked with pain in the right side of the neck, which caused some difficulty in swallowing, and this was found to be due to a similar condition in the carotid artery, which was very painful when pressed upon, while the parts around the seat of pain were somewhat swollen, and in the course of a short time a gland behind the lower jaw became enlarged and swollen, and remained for some time tender and very painful. In the course of time—at the end of June—all symptoms had disappeared, and he left the hospital in good health, and has remained so up to the present time.

Whilst under my care he was seen by Mr. Holmes and Dr. Whipham, who agreed with my diagnosis of the case, namely that it was an arterial inflammation gradually progressive, and involving the fibrous tissues of the vessel. The urine did not at any time show any evidence of albumen or of lithates, and the man had never suffered from rheumatism or gout. The heart sounds, although not very distinct, did not give evidence of any serious lesions.

I have searched for record of any similar affection, but neither in the Transactions of this Society or elsewhere have I been able to meet with a description of similar symptoms. That the disease was situated in the artery is evident from the character and course of the pain, and from the tenderness which was caused by pressure on the vessel, as well as from the fact that the progress was from above downwards, the contrary of what occurs when the veins or lymphatics are affected. I account for the presence of a localised œdema in the arm and leg by the implication by contiguity of some of the superficial tributaries of the venæ comites, and thus

may be explained the inflammation which occurred in the lymphatic glands.

Whether the disease was due to syphilis or some other taint, there is no evidence to show, except that the aggravation of pain at night bears some analogy to the specific inflammation of the fibrous covering of the bones and joints. Nor is the intermittent and occasional onset of the symptoms quite consonant with the idea of a syphilitic origin, but points rather to some intrinsic condition of the vessels which renders them liable to these attacks.

XL.—*A Case of Cross-legged Progression.* By W. J. Tyson, M.B. (*Folkestone*). *Read April* 22, 1881.

J W., æt. 67, a waggoner for many years. When 14 he fell on a barn floor and injured the right leg; this accident kept him in bed for four months. He says from this time he could never straddle a horse, and always walked more or less lame. Sixteen years ago he began to have difficulty in keeping up with his horses, his legs becoming more and more approximated; the last fifteen months he has walked cross-legged. The latter position is maintained day and night; with some force the legs can be unlocked and brought parallel, but not without causing pain.

There is only the slightest movement in each hip-joint; the surrounding bone appears considerably thickened. When he gets up in the morning, or when he starts to walk, a crackling noise is distinctly heard. Both extremities are extremely adducted and everted, the heels are far apart and toes closely together; the right leg crosses the left just above the knee-joint. Both knee-joints can be fully flexed; all the joints except the hips are movable and unaffected in any way.

He *can* walk with two sticks very slowly and for a short distance, but he nearly always uses two crutches.

In commencing to walk the crutches are first placed forwards, and then the body is thrown on to them, the lower part of the spine appearing to take the place of the hip-joints, there being scarcely any noticeable movements in either hip or knee on either side.

The following description, I believe, best explains the cross position of the limbs. In the original accident some injury to the right hip-joint occurred, and during its repair adduction of the right leg took place—this, then, would naturally account for the difficulty he now first experienced of sitting across a horse's back—the right hip became more or less ankylosed; now, as the adduction of the right leg increased, so there was a tendency for the left one to pass across to the right side in order to keep up equilibrium; and also as the movements in the left hip-joint became less, so ankylosis would soon set in in this joint, and thus both hips would become fixed. The complementary movement in the lower part of the spine supplies to a great extent that which is lost in the hips.

The cause of the cross position of the legs was discussed when Mr. Lucas brought forward his two original cases before this Society on October 22 of last year, but more fully by him subsequently in a paper to the *Lancet* in the following December. The three theories discussed in Mr. Lucas's latter communication may be called (1), that of adduction; (2), that of gravitation; and (3), the painless one, or the case where the leg on the side of the diseased hip is thrown on the limb of the opposite side for the sake of rest.

It seems to me that the first two causes, viz., that of adduction and gravitation, must be taken together, the latter following upon the first, and the last cause is an optional one. Thus I would explain the position of the limbs in these cases in the way that the present case has been accounted for, viz., first adduction taking place—it making little difference whether this is produced optionally to relieve pain, or whether the limb is adducted in the course of the hip disease—then if the limb is sufficiently and permanently adducted to interfere materially with progression, the sound one will naturally be passed across its fellow to keep the body in the erect position. The diseased hip-joint first becomes ankylosed, and then the other becomes so from want of use.

I take it that in any case of *extreme* adduction, no matter what the cause, and providing that it be maintained, the legs are liable to cross for the reasons above given, viz., the keeping of the body straight, and for better progression.

In the commencement of these cases there is probably the usual inversion accompanying the adduction, but as

soon as the patient attempts to walk, this is slowly changed into eversion, as this latter position allows greater scope for the movement of the knees and ankles.

The main difference between the present case and those exhibited by Mr. Lucas is in the more or less complete absence of the knee movement in the former, whereas in Mr. Lucas's cases the above movement seemed considerable.

XLI.—*Excision of the Tongue.* By WILLIAM STOKES (*Dublin*). *Read April* 22, 1881.

OF the surgical merits of excision of the tongue, the opinion of most experienced operators has undergone of late years, as it has of many other procedures formerly considered unjustifiable, a signal change. Not many years have elapsed since an eminent authority, Professor Gross, of Philadelphia, stigmatised the operation as a 'cruel procedure,' and that the possible prolongation of the patient's life for a few days or weeks would not compensate him for so 'terrible an ordeal,' which could hardly have any other than a fatal termination. My late colleague, Mr. Collis, has, I think, truthfully stated that one of the reasons why there has been until quite recently such a dread and horror of the operation, was not so much on account of hæmorrhage or other unfavourable sequelæ, as because of the cruel tales that are told of the scenes that were enacted in former times, when the removal of the tongue was had recourse to, not to relieve suffering and prolong life, but as a form of punishment for political and other offences.

The following remarks are suggested by six cases in which I performed excision of the tongue. All were operated on for lingual epithelioma, and all by the same method; one I shall presently describe.

The first of these cases was that of a male, æt. 45, who was under my care in the Richmond Hospital in January 1871. The disease (epithelioma) was situated on the right side of the anterior third of the tongue, and had been first observed about twelve months previous to the patient's admission into hospital. There was in this case much enlargement of submaxillary glands, considerable infiltration and pain, profuse salivation, and great indistinctness of articulation. There was no history of syphilis, nor was there evidence of

the disease being hereditary. The patient believed it was connected with the local irritation of a diseased tooth, a view which was probably correct. I recommended excision, and performed the operation on January 19. The enlarged submaxillary glands were removed immediately after the operation on the tongue, and the patient made a rapid recovery, leaving the hospital four weeks after the operation. Three months afterwards I saw the patient, and found him free from pain and discharge, and his articulation remarkably distinct. The subsequent history of the case I regret I am unable to give, as I lost sight of the patient.

The second case was of a man, æt. 48, who was under my care in the Richmond Hospital in February 1871. In this case the disease had lasted two years. The ulceration was above and to the left side of the organ, and extended considerably further back than in the former case. There was also in this the unfavourable complication of considerable submaxillary glandular enlargements, and as in most of the other cases, extreme pain, profuse salivation, and indistinctness of utterance. No local cause could be assigned, nor was there evidence of the disease being connected with any hereditary taint. Excision was performed on February 12, and was unattended with hæmorrhage or other accident, which in truth may be said of all the other cases. I saw this patient a year and ten months after the operation, and no return of the disease was then apparent.

The third case was that of a man, æt. 50, who was under my care in the Richmond Hospital in February 1875. The patient had for five months been suffering from an extensive epithelial ulceration on the left side of the tongue, and the case, like the previous ones, was complicated with glandular enlargements, which were removed at the time of the operation. The patient's suffering was so great that he was very urgent to have the operation performed, which accordingly was done on February 17, 1875. There was no accident at or subsequent to the operation. Eighteen months subsequently I saw the patient, and there was no evidence of the disease reappearing.

The fourth case was of a tall, strongly-built man, æt. 56, who was under my care in Richmond Hospital in January 1876. He had been suffering from lingual epithelioma for a period of fourteen months. The ulceration was very extensive, being not only on the right side but extended to the upper surface and across the mesial line. Though the disease

was so extensive, there was but one gland that was perceptibly enlarged. The infiltration was so great, and extended back so far, that I was not particularly desirous to operate in this case, but the patient and his friends were so anxious for it, that I consented, and performed the operation on January 5, 1876. The method of operating was quite similar to that I adopted in the former cases. At the expiration of three months from the date of the operation I saw the patient, and contrary to my expectation, found his condition most satisfactory. After this I unfortunately lost sight of him.

The fifth case was that of a dark-complexioned, spare female, æt. 41, who was under my care in the Richmond Hospital in the early part of last year, and on whom I operated on February 16, 1880. The ulceration in her case was very extensive, spreading from the left side of the tongue to its upper surface. There was great pain of the usual shooting, darting character, and fetid discharge from the mouth. In this case I removed four enlarged glands. The patient recovered completely from the operation, and went into the country. In four months, however, she returned, when I was sorry to find unmistakable evidence of the disease having recurred, the pain, from which for fully three months she had enjoyed an immunity, had returned, and with much severity. As she was in a very weak anæmic debilitated condition, I deemed any further operative measure undesirable, and directed my attention, therefore, mainly to alleviation of her suffering. Having heard that among other alleged benefits to be derived from Chian turpentine, a distinctly anodyne effect can be produced, I administered the drug in this case, and for this purpose, and although my experience of it is confined to this single case, it is, I think, noteworthy that not only was the desired anodyne effect produced, and that in a marked degree, but what was unexpected by me took place, namely, a marked change in the character of the ulcer. It diminished in size, and in certain situations showed a decided tendency to cicatrise. The improvement, however, I am bound to say, was only temporary, but while it lasted was so distinct, and followed so promptly on the drug being exhibited, that I deem the fact worth mentioning.

The sixth and last case I will mention was a man, æt. 60, who was under my care last November. The ulceration was mainly on the upper surface and anterior portion of the tongue. The

disease had lasted, the patient stated, three years. There was much thickening and induration, speech and deglutition were both difficult; there was great pain, and a profuse and constant fetid discharge from the mouth. There were no glands apparently enlarged. I removed the tongue on November 30, adopting the same procedure as in the preceding cases. Like them, there was no secondary hæmorrhage, or other untoward sequela during the convalescence of the patient, and at the time he left hospital at the end of December, his power of clearness of articulation had returned, and he expressed himself in every way pleased with the result of the operation. Too short a time has elapsed since the date of the operation to enable me to express an opinion as to whether the improvement in the patient's condition is likely to be a permanent one or not.

It will thus be seen that in these six cases relief from suffering, caused by enlargement of the tongue, difficulty of deglutition, difficulty of articulation, discharge, and especially pain, was in all obtained as an immediate result of the operation. In two of the cases a considerable time, twenty-two months and eighteen months, elapsed without any recurrence of the disease. In two others three months and four months elapsed, in one the patient was lost sight of immediately after the wound healed, and in only one of the cases was an almost immediate return of the disease observable. The results are, I think, of surgical importance, and to my mind go a long way in proving how rash it was of surgeons formerly to condemn in terms of such unqualified disapproval an operation which has in so many cases been a means of, at all events, alleviating in a marked degree one of the most distressful conditions that the surgeon is called upon to deal with.

The results too of my cases, as well as those of my colleagues, to a great extent prove how desirable it is that the operation should be undertaken at an early period of the development of the disease, and if possible before the occurrence of glandular complications. Here, no doubt, great difficulties beset the surgeon, difficulties of differential diagnosis, which at times are so great as to baffle the most accurate observers. 'In such cases, no doubt,' as Mr. Lund observes, 'as in all instances of malignant growth, there is a time if we could only fix it in which the heterologous growth is local in its nature.' Impressed as I have ever been with the truth embodied in these words, I cannot at all

share the views of those—and there are still many such—who hold that excision of the tongue, both on account of the risk of the operation, and the disease for which it is performed, is an unjustifiable procedure. 'The risk,' as Sir James Paget says, 'is really very small. I have not had a fatal case, or witnessed one, and there are few of even the minor operations of which I could say so much; and the comfort given is that the patient is delivered for the time from all the misery of one of the most distressing and disabling conditions of disease, and till the cancerous growth is renewed, may enjoy complete health and do all his work.' This opinion, coming from so eminent an authority, ought, I think, to go far in settling the disputed question as to the desirability or otherwise of the operation. An important question in reference to this subject is as regards the cases where the disease is very limited, and in which it may be fairly discussed as to whether the excision—a partial one—is to be unilateral or bilateral. I cannot but think that one reason—and it is probably the main one—why so frequently a rapid return of the disease follows the operation, has been confining the excision to one half only of the tongue. Arguments based on the independent, or nearly independent, vascular and nervous supply of each lateral half of the tongue have been adduced in favour of unilateral excision, but certainly in bilateral excision the disease is more likely to be eradicated, and strange though it may appear, the patient's power of clear articulation appears to be better retained. It should also be borne in mind, how rapidly the tongue grows again, even after almost complete bilateral ablation, a fact recently noticed by Mr. C. Heath, who has mentioned a case where ten years ago he completely removed a tongue, and on lately examining it found the organ almost of its normal size.

Two propositions, therefore, may I think be laid down in reference to this operation: first, that the disease should be removed as early in the period of its development as possible, and second, that the excision, unless in some very exceptional cases, should include both sides of the tongue.* The next

* There seems to be a special susceptibility, as observed by Collis and others, 'of the fine areolar tissue in the raphé to become diseased. I have found that the disease quickly runs back in the raphé far beyond the line of infiltration in the muscle. Hence it comes that we often seem to remove all, while there is left behind a most serious centre for propagation of the disease with a redoubled virulence. Lymphatic vessels abound in the raphé, and the fine areolar tissue around them becomes quickly poisoned.'—'Contributions to Operative Surgery,' *Dub. Quar. Jour.* 1867.

important question to determine is, what is the safest method of excision? There are two dangers of great moment in connection with this operation; the first, at the same time an immediate and remote one, hæmorrhage; the second, septic complications. Surgeons have ever dreaded these, the first especially, when it occurs as a remote sequela, as the arrest of hæmorrhage under these circumstances is a matter of much difficulty.

It is noteworthy that the only cases in which I have seen these unhappy sequelæ to the operation have been those which have been operated on either by incision through the tongue, or by the cautery applied either by the galvano-caustic wire, or by Paquelin's thermo-cautère. I, therefore, acquired a prejudice against these methods of procedure, which time has rather strengthened than diminished. On examination of certain statistics of tongue excision, and in the cases that have come under my own observation, I have noted that removal of the organ by a cutting operation, if I might use such a term, is not only more liable to be followed by hæmorrhage, but also what is of more serious moment, by septic infection, the usual outcome of which is in a large number of cases either pulmonary gangrene or septic pneumonia. This is not observable at all to the same extent in those operated on by the écraseur. There are many cases, doubtless, in which the extent of the disease is so great that this instrument is inapplicable. In such, however, it becomes a question whether any operation is likely to be attended with even temporary improvement.

The statistics I have alluded to consist of fifty cases collected in a monograph on excision of the tongue by Dr. Schläpfer (Die vollständige Extirpation der Zunge), and thirty-four cases collected by Mr. Collis. In the former series I find that six were operated on by the galvano-caustic wire, one by ligature, one by caustic arrows, the method, I presume, of Maisonneuve, ten by incision or cutting operations, and thirty-two by the écraseur. The results as regards septic sequelæ of the two latter methods of procedure, incision and the écraseur, are very remarkable. In the thirty-two écraseur cases there were three in which death supervened from septic causes, a percentage of mortality of over nine; whereas in the ten cases operated on by incision there were six cases of death from septic causes, giving a percentage of mortality which reaches the startling figure of sixty. On examining Mr. Collis' tables, we observed a remarkable con-

firmation of these results I have just mentioned. As mentioned above, his record consists of thirty-four cases. Of these one was operated on by the ligature, thirteen by incision, and twenty by the écraseur. I find that of the cases operated on by the écraseur there were no deaths from septic causes, whereas of the thirteen cases operated on by incision, there were eight deaths, a percentage of mortality of sixty-one and a half. In Schläpfer's record, therefore, we find the percentage of mortality of incision operations to be sixty, and in that of Collis to be sixty-one and a half. It must be admitted, I think, that so startling a fact as this is strongly confirmatory of the view that tongue excisions performed by a cutting method are specially prone to be attended by septic infection.

As an objection to this deduction, it may be urged that these statistics are not of sufficient magnitude to justify the conclusion I have drawn, and also that possibly the cases operated on by incision were of a more serious character than those dealt with by the écraseur. I am willing to admit the possibility of the latter, and also the numerical poverty of both the records alluded to above. It should be remembered, however, that the former objection might be urged against all surgical statistics, and also it is not by any means clear that aggravation of disease could have any bearing on the subject of our immediate consideration, viz., the probability of septic sequelæ to the operation; and as regards the latter objection, the broad fact that the mortality from septic causes after one class of operations is over sixty per cent., and in the other under six ought to largely counterbalance or outweigh these objections, which possibly may be made to the records I have mentioned, and to a great extent based my opinion on. Mr. A. Barker has within the last day or two very kindly furnished me with a table of cases which he has collected, three of which were operated on by incision and without unfavourable septic consequences. This result must be admitted to be very exceptional, but the proportion of cases, however—three—is so small, it does not materially alter the results obtained in the other and larger statistics I have alluded to.

As a safeguard against the introduction of septic agencies, tracheotomy, as is well known, has been proposed. I cannot but think, however, that tracheotomy is but a slender reed to rely on when performed for the object of preventing the effects of septic agencies. The case is different when the

porarily by adhesive plaster to the side of the cheek or forehead. This double thread, which in the event of secondary hæmorrhage occurring would doubtless be of the greatest assistance to the surgeon in enabling him to draw forwards the base of the tongue and see and secure the bleeding vessel, I usually remove on the third day after the excision. During the convalescence of the patient I recommend frequent syringing out of the mouth with a weak solution of permanganate of potass or carbolic acid, and also frequent washing of the mouth with a solution of chlorate of potass in acid infusion of roses is indicated. I believe that by the use of the écraseur employed in the way I have described, coupled with proper antiseptic measures during the healing of the wound, the operation is attended with little pain, with the minimum of risk as regards either primary or secondary hæmorrhage, or those septic troubles which, after all cutting operations, are so fruitful a means of raising the mortality attending this important operation.

XLII.—*Aortic Aneurysm encroaching on the Trachea at its Bifurcation demonstrated during life by the Laryngoscope.* By THOMAS WHIPHAM, M.B. *Read May* 13, 1881.

JOHN MACLEAN, æt. 49, a carpet cutter, was admitted into St. George's Hospital, under Dr. Wadham,* on March 7, 1881, almost speechless, and suffering severely from dyspnœa.

The history of his illness was elicited after the urgency of this attack had passed off, and the patient had become quiet and comfortable.

It appeared that he had had no serious illness in his life, and had not suffered from syphilis; there was no history of asthma either in himself or among his relatives. He had never suffered from rheumatism, and his occupation did not involve any severe strain.

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as far back as a point corresponding with the last molar tooth in the lower jaw. This incision goes through all the tissues, first of the lip, and then of the cheek.' A Liston's needle, armed with a double thread, is then made to traverse the centre of the tongue from side to side; the double thread is then left, and the needle withdrawn. To each strand of the thread an écraseur chain is attached, and these are drawn through the wound, and both chains, one embracing the upper and the other the lower tissues of the organ, are slowly tightened and made to divide the tongue simultaneously or consecutively. The objections which I think may be made to this operation are the unnecessarily long curved incision which is made through the labial and buccal tissues, the unnecessary complication of having to work two écraseurs, and lastly in the event of either retraction or hæmorrhage taking place, there being no means of laying hold of the root or base of the tongue, drawing it forwards and exposing the source of hæmorrhage.

To get rid of these defects I modified the operation in the following manner, and this modification I adopted in all the cases I have brought under the notice of the Society this evening. I commence by transfixing with a triangular bistoury the cheek at a point corresponding to the last molar of the lower maxilla, and make an incision downwards and forwards towards the angle of the mouth, terminating the incision a few lines above the angle. All bleeding vessels being now secured and the parts retracted, I pass a double ligature through the tip of the tongue to facilitate the drawing forward of the organ by an assistant. This being done, a straight Liston's needle, armed with a strong double strand of carbolised silk is passed through the base of the tongue at a point well behind the foramen cæcum. In front of this the chain of an écraseur is passed round the tongue. The chain is then slowly tightened, and the organ is gradually severed. I usually devote to this stage of the operation from thirty-five to forty-five minutes; in the opinion of some surgeons, perhaps, an unnecessarily long time. If it is a fault, however, it is on the right side, for I have never been troubled after any of my operations on the tongue with secondary hæmorrhage either immediate or remote.

A few points of interrupted suture then bring the edges of the wound in the cheek together, which wound as a rule heals by first intention. The free ends of the strand of silk passed through the base of the tongue, are then fastened tem-

porarily by adhesive plaster to the side of the cheek or forehead. This double thread, which in the event of secondary hæmorrhage occurring would doubtless be of the greatest assistance to the surgeon in enabling him to draw forwards the base of the tongue and see and secure the bleeding vessel, I usually remove on the third day after the excision. During the convalescence of the patient I recommend frequent syringing out of the mouth with a weak solution of permanganate of potass or carbolic acid, and also frequent washing of the mouth with a solution of chlorate of potass in acid infusion of roses is indicated. I believe that by the use of the écraseur employed in the way I have described, coupled with proper antiseptic measures during the healing of the wound, the operation is attended with little pain, with the minimum of risk as regards either primary or secondary hæmorrhage, or those septic troubles which, after all cutting operations, are so fruitful a means of raising the mortality attending this important operation.

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He had never before experienced an attack like the one for which he was admitted.

He had for some weeks suffered considerable pain under the right scapula, the pain occasionally darting into the

* I am indebted to the kindness of Dr. Wadham for permission to publish the case.

spine. This pain was not influenced by food, although he had been under treatment for dyspepsia.

For the fortnight previous to his admission he had a tickling cough, which was variable; as a rule replacing the aching and being in turn replaced by it.

Such was the history as far as it could be obtained under the circumstances.

On the morning of March 7, at about 7 A.M., when he was going to his work, he was suddenly seized with a most severe attack of dyspnœa, which rendered him speechless and almost unconscious of what was going on around him. He was in some degree confused, but felt no acute pain. He was brought at once to the hospital by his friends.

At 8 A.M. he was admitted in a state of extreme dyspnœa, ashy pale, unable to speak, and heedless of anything said or done. His hands were very cold, his breathing was stridulous.

Two leeches were applied to each side of his larynx, and he took a mixture containing ether and chloroform.

By 10.30 A.M. his respiration had become perfectly quiet, and his voice, though weak, was natural in tone. He was much exhausted, consequently no complete physical examination was possible. The following facts were made out:—

The heart was not obviously out of position; a systolic bruit was heard over the base, and to the right of the sternum. No abnormal pulsation or thrill was detected. The pulses in the radial arteries were equal, strong, and rather hard—126.

Throughout the chest wheezing and stridulous sounds were audible.

For the above notes I am indebted to Dr. A. T. Myers, Medical Registrar.

At 2 P.M., at the request of Dr. Wadham, I examined the patient with the laryngoscope, he being at that time fairly comfortable.

The pharynx was natural; the vocal cords were faintly pink, but there was no swelling of the larynx, and all movements of the cords were perfect. The first two or three rings of the trachea were visible and normal in appearance, but below them the posterior wall of the trachea was bulged inwards, so that any view of the bifurcation of the trachea, which the unusually wide rima glottidis would have rendered easy, was impossible. The mucous membrane covering this swelling of the trachea was intensely congested, and so far as could be estimated the tumefaction was situated

about three inches below the vocal cords. Laryngoscopic examination was unusually easy, as the patient was not in the least troubled by the contact of the laryngeal mirror.

At 4 P.M. there was a sudden recurrence of the dyspnœa, and as I happened to enter the hospital at 4.30 I availed myself of the opportunity to repeat the laryngoscopic examination; this was effected without causing the patient any increase of his difficulty in respiration. It was then found that the larynx was unaffected; that its movements were perfect; in fact, so powerful was the action of the crico-arytænoidei postici muscles, that I have never before seen the vocal cords so far abducted. The swelling in the trachea remained as at the former inspection. The cardiac bruit was entirely drowned by the noisy respiration. Inspiration was extremely difficult, was attended by a harsh, hissing sound, and by marked retraction of the intercostal spaces. No abnormal pulsation was evident in the thorax. The respirations were thirty-eight in the minute, and shallow. The man was perfectly sensible, deathly pale, and apparently free from acute pain. He could not answer when spoken to by reason of the urgency of the dyspnœa; he had no cough.

Previously to the second laryngoscopic examination the patient had inhaled two doses (each containing three minims) of nitrite of amyl without benefit, and subsequently conium inhalation was equally inefficacious. He was however able to swallow, and took another dose of the ether and chloroform mixture. His pulse was about 140. He never rallied from this condition, and died at 8 P.M.

The autopsy took place sixteen hours after death.

The lungs were congested and œdematous, their anterior borders emphysematous.

The heart weighed 14 oz., was uncontracted, and full of partially decolorised clots. The muscular walls of both ventricles were much thicker than natural; the valves were healthy.

The aorta was very atheromatous. The descending portion of the arch and the upper half of the thoracic aorta were dilated into a large aneurysm, lying along the front and left side of the fourth to the eighth dorsal vertebra. The walls of the sac were for the most part thick and dense.

From the right side of the upper part of this true aneurysm a sacculated aneurysm arose, whose walls were soft and thin. It was evidently a comparatively recent formation. It extended in front and on the right

fourth to the sixth dorsal vertebræ, lay just behind the trachea, and bulged the soft posterior wall of that canal forwards, appearing in its interior as a rounded mass just above the bifurcation. This bulging at the time of the necropsy almost entirely blocked the trachea; the mucous membrane over it was deeply congested and slightly abraded.

The œsophagus was compressed between the aneurysm and the trachea; its posterior wall was very thin.

The sacculated aneurysm communicated with the primary sac by an orifice of about the size of a florin; it contained some laminated coagulum, while the sac from which it arose was filled with dark recent clot.

The liver was full of dark blood; it weighed 4 lbs. The spleen was similarly congested; it weighed 5 oz. The kidneys were dark-coloured from venous congestion, their capsules adherent, their cortices diminished, and their surfaces granular.

Remarks.—It is, comparatively speaking, rare that in laryngoscopic examination an opportunity occurs of observing any alteration in the trachea when the disease is at any great distance below the vocal cords, and when any great amount of dyspnœa exists.

In this instance the patient was unusually tolerant of the laryngeal mirror, so much so that a laryngoscopic examination was effected when the dyspnœa was so urgent that the patient was unable to speak, and effected without increasing his distress in the slightest degree.

It was almost entirely due to the laryngoscope that the diagnosis of aneurysm was established. Had it not been for the aid thus afforded, it would have been extremely difficult, save perhaps by the hissing character of the inspiration which, however, lacked the stridor of laryngeal stenosis, to have avoided the error that the patient was the subject of some disease of the larynx itself.

All who are familiar with the use of the laryngoscope have, doubtless, seen again and again cases in which very great alteration both in the shape and calibre of the trachea have been the result of pressure, *e.g.* of a goitre, but it very rarely happens that such clear evidence of an aneurysm is forthcoming.

In this instance the bulging of the posterior wall of the trachea was distinctly visible, but as the laryngoscopic examination was made only with the aid of a common duplex lamp, the illumination of the parts below the vocal cords was

insufficient to render any pulsation, which may have existed in the tumour, equally visible.

The diagnosis was that of a tumour, in all probability aneurysmal, pressing the trachealis muscle forwards, and so causing suffocation. This diagnosis was based upon the appearances revealed by the laryngoscope, and upon the fact that a systolic bruit was audible over the base of the heart.

Among the many points of interest in this case two more especially call for remark.

1. That the patient had been treated for dyspepsia. It is to be feared that error in diagnosis in the case of persons who complain of epigastric and interscapular pain is by no means uncommon. The present is, therefore, one of many similar instances which read a practical lesson to the physician.

2. The sudden access of acute symptoms in this case is remarkable, and must, I think, be explained by the occurrence of some sudden dilatation of that part of the soft and thin walls of the secondary aneurysm which pressed upon the posterior wall of the trachea. This dilatation may have been the result of the patient's journey to his work. It seems highly improbable that the sudden and urgent symptoms were due to the actual formation of the entire secondary aneurysm, because at the post-mortem examination, laminated coagula, which could scarcely have been formed in a few hours, occupied the sac.

The rarity of laryngoscopic demonstration of an aneurysm thus encroaching on the trachea, however, constitutes the chief interest in the case, and for this reason it was submitted to the Society.

XLIII.—*A Case of Antiseptic Osteotomy of the Tibia, in which rapidly fatal Carbolic Intoxication occurred.* By A. Pearce Gould, M.S. *Read May* 13, 1881.

J. T., æt. 8, was admitted into the Westminster Hospital under my care, on October 27, 1880. He was a country lad, who had been under treatment for ricketty deformity of the legs at the National Orthopædic Hospital for some time, and he was sent to the Westminster Hospital, to have osteotomy performed. He came to the Hospital from the

country, not after a stay in London. He was a ruddy healthy-looking lad, well nourished, strong in limb, and with the exception of deformity of the bones, apparently in perfect health. There was a marked curve inwards and forwards in the lower third of each femur, and the lower end of each tibia was curved outwards and forwards to a still greater extent; this curve was most marked on the left side. The boy stated that his legs had been bent as long as he could remember, and that he had worn irons and splints for years, but without any benefit. For three days the boy appeared in perfect general health, cheerful, free from pain, ate and slept well.

On October 30 he was placed under the influence of chloroform, and I divided his left tibia with McEwen's chisel and mallet, using Listerian precautions. The bone was very hard indeed, and the chisel was introduced into the wound three several times before the fracture could be completed. There was no notable hæmorrhage, the limb was put up with the curve straightened out, and retained in splints. The spray was carbolic lotion and steam 2½ per cent.; the part operated upon, the instruments used, and my hands were washed in carbolic lotion 5 per cent., and each time the chisel was removed from the wound it was replaced in a dish of this lotion. A double layer of good 'protective' supplied to me by Martindale was placed over the wound, outside that a few folds of carbolised gauze wrung out of carbolic lotion 2½ per cent., and over all the usual carbolised gauze dressing, fastened with bandages of a similar material.

The operation was performed at 2 P.M., and lasted in all about 20 minutes. The lad quickly recovered from the effects of the chloroform, and was restless, crying out with pain until 8 P.M. He then fell asleep, and slept well all through the night. Next morning, October 31, he was free from pain, bright and cheerful, made his usual breakfast of bread and milk, and expressed himself as quite well; his temperature at 9 A.M. was 98·4°. He continued in this state until 11 A.M. (21 hours after the operation), when he vomited some yellowish fluid. At 1 P.M. he took 4 ounces of beef tea, and vomited it at once; at 3 P.M. he passed a loose orange-coloured fluid motion; at 4 P.M. he passed another similar motion, and vomited some milk and watery fluid. At 7 P.M. temperature 100·2°, he was violently sick and became very rigid and cold; he was then ordered ʒij. of brandy every half-hour, milk and soda water, and hot bottles in the

bed; he vomited every dose of brandy and milk immediately. At 8 P.M. he became very restless, throwing himself about and screaming, and he was given ʒj. of brandy every ¼-hour, and soon afterwards became quiet. At 9 P.M. he was almost unconscious, speaking when roused but incoherently; he rallied after a mustard poultice applied to the left side of the chest. At 10 P.M., I saw him, and found him lying flat on his back in bed, conscious, not complaining of any pain, his face was pale, and with his arms and hands rather cold; his body and lower extremities warm, temperature in axilla 100·2°. His breathing was very hurried but not difficult, 44 per minute, air entered both lungs freely. Pulse very small and rapid, and hardly to be counted at the wrist; no murmur with the heart sounds. The tongue had a thin white fur on it; half an hour before my visit he had vomited about a pint of almost clear watery fluid; no tenderness in belly. Pupils small. He had not passed water since the early morning, and could not pass any. That passed earlier had been unfortunately thrown away, the nurse did not notice any peculiarity in it. I ordered turpentine stupes to the chest, iced beef tea, and white of egg, and brandy. He was very restless up to 12 midnight, calling out wildly for people and things and trying to get out of bed; he took the white of an egg and an ounce of brandy and did not vomit. Between 12 and 2 A.M. he took 3 ounces of beef tea, and 2 ounces of brandy. At 2 A.M. temperature 99·6°, he was quite unconscious and sinking, at 2.35 he screamed and appeared to be choking, was raised in bed and gasped for breath and died at 2.45, exactly 36¾ hours after the operation. The bowels acted at the time of death, no urine passed, no vomiting after 9.30 the previous evening. The wound was not examined after the operation, there was no pain after the first few hours, no hæmorrhage.

Autopsy 35 *hours after death.*—Rigor mortis well marked; a good deal of post-mortem congestion reaching up to the nipple on the chest, and all over the belly. Body well nourished. *Heart* 4½ ounces; right cavities filled with soft black coagulum loosely adherent; left cavities empty and contracted; no staining of endocardium or petechiæ on surface. *Blood* everywhere black, in venæ cavæ and largest branches partly fluid, partly in very soft coagula, elsewhere entirely fluid; no staining of lining of vessels anywhere. *Lungs* Rt. 8 ounces, Lt. 7½ ounces: no petechiæ; fluid blood in pulmonary vessels; mucous membrane of bronchi congested,

no excess of mucus in tubes, lung tissue apparently healthy with the exception of slight congestion. *Trachea* intensely congested, with excess of tenacious mucus on the surface. *Spleen*, 2¼ ounces, firm, unusually mottled. *Liver*, 23½ ounces, a few pale mottlings on the surface of right lobe, on section the lobules beneath for ¼ to ¾ inch were yellowish white in colour and bloodless. *Alimentary Canal* apparently healthy in the whole length, no congestion or ulceration noticed. *Brain* 49 ounces, vessels on surface full, puncta cruenta numerous and distinct. *Kidneys*, no change to naked eye. *Bladder* empty, a catheter was passed soon after death, but I only drew off two or three drops of urine. *The Wound*: a small blood clot lay in wound, none in medullary canal, no splintering of bone, cut surface of which was nearly even; tibial vessels uninjured, no thrombosis. No appearance of admixture of fat with the blood.

Portions of all the organs except the intestine were prepared for microscopical examination by my friend Dr. Gibbes. The spleen, liver, brain and pons do not show any departure from the normal.

In the *Lungs* the changes seen are twofold: 1. Thrombosis of the minute vessels; in some sections examined every vessel visible is seen to be plugged with blood-clot. 2. Small areas of inflammatory round-cell infiltration, some of these are very minute, others from the extent and intensity of the change might almost be called minute abscesses.

Kidneys.—Many sections show nothing at all abnormal if we exclude a rather deep staining with hæmatoxylum of the nuclei of the tubular epithelium. In other sections minute spots of inflammation are seen, consisting of masses of small deeply-stained round cells. They are generally to be traced in close relation with vessels; some of the smaller and less marked ones are fusiform in outline and extend along a vessel, but the more marked ones are globular. Close to one of the largest of these inflamed spots is seen a good sized vein filled with clotted blood, and one artery can be seen plugged in a similar manner, but the other vessels are empty, or with only fragments of clot in them.

Stomach.—The most marked changes are in the stomach. The sections are through the lower end of œsophagus and adjacent part of stomach. The œsophagus is healthy. The proper glandular structure of the mucous membrane of the stomach is nearly entirely destroyed by cellular infiltration, evidently inflammatory in nature. At places, some traces of

DESCRIPTION OF PLATE VII., ILLUSTRATING MR. A. PEARCE GOULD'S CASE OF CARBOLIC ACID POISONING.

FIG. 1.—Section of the cortex of the kidney, showing inflammatory exudation. *a*, renal tubes; *b*, malpighian body; *c*, artery; *d*, compressed renal tube.

FIG. 2.—Section of a portion of lung, showing inflammatory exudation. In the centre the process is so intense that some of the cells have been lost from softening of intercellular material; near this, is a small thrombosed vessel.

FIG. 3.—Part of a section of the stomach, showing the mucous membrane, the glands entirely destroyed by a small-celled, inflammatory, exudation, softening down in the centre.

The sections were magnified by Hartnack, eye-piece No. 3, obj. No. 8.

Fig 1

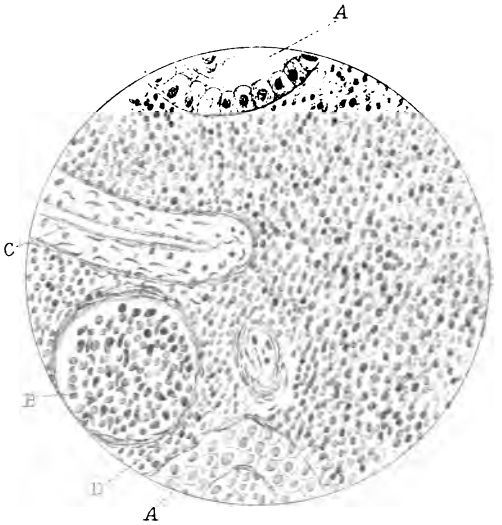

Fig 2.

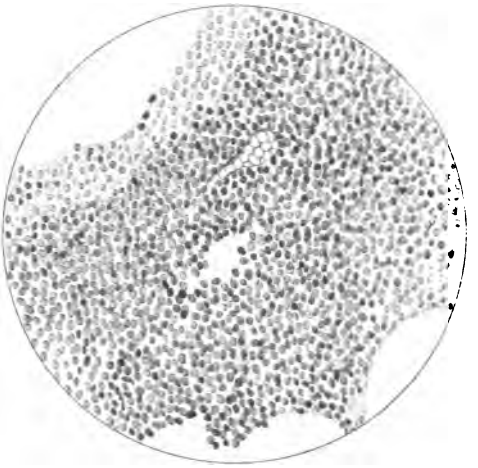

Fig 3.

Mintern Bros Lith

the glands are still to be seen, while in other parts these structures are entirely destroyed. The exuded cells are mostly round, some oval or oblong, and all stain deeply. The infiltration extends the whole depth of the mucosa and submucosa, and in some places reaches even far into the muscular coat of the stomach in an intense form, but for the most part it can be seen to be much less in degree as it continues down between the bundles of muscular tissue. There are one or two spaces in this inflamed mucosa suggesting that here the process has gone on to suppuration. There is no distinct evidence of thrombosis; the condition may fairly be called *Acute Croupous Gastritis.*

There is no appearance of fat embolism in any organ examined.

Remarks.—In November 1878 Mr. Barker read before this Society a paper on a case of antiseptic osteotomy of the internal condyle of the femur, in which death occurred very quickly from septic pneumonia. If further evidence were needed to show that osteotomy, even when performed with our present antiseptic precautions, is not devoid of danger and that to life, my case affords it. And this reason, and the fact that the cause of death is either obscure or else a condition not generally sufficiently recognised, and the remarkable pathological changes found, have induced me to bring the facts under the notice of this Society.

We may at once exclude as the cause of death shock, the immediate and remote effects of the anæsthetic, either of the acute specific diseases, erysipelas, pyæmia, and fat embolism. This last was especially considered, but there was no crushing of the medulla of the divided bone such as would give rise to it, nor was there any sign of this condition in the vessels visible to the naked eye nor in microscopic sections, while such an accident would not explain the extraordinary pathological conditions present. As regards the different forms of septic poisoning, and adopting the classification of the Committee of the Pathological Society, it is evident that time alone excludes septic infection and pyæmia, not to mention the absence of sufficient primary and secondary changes. On the other hand, the vomiting, diarrhœa, and collapse are symptoms present in septic intoxication, but this supposition is negatived: 1st, by the presence of true inflammation of the stomach, lungs and kidneys; 2nd, by the absence of general visceral congestion and capillary hæmorrhage, especially beneath the pleura,

pericardium, and endocardium; 3rd, by the absence of any source of such intoxication, for which a large dose of the poison rapidly introduced is necessary; 4th, by different clinical signs, notably the low temperature, and death from the failure of respiration rather than of the heart.

As regards the ingestion of any irritant poison, I have ascertained that this patient did not take anything but the simple food given by the nurse in charge, which several other patients shared without any ill result; he was under the care of an extremely careful and efficient nurse, so that we may with certainty exclude this cause. But there evidently was some irritant poison circulating in the blood, and the question arises whether it may have been carbolic acid absorbed from the wound. The answer to the question naturally divides itself into a consideration: 1st, of the symptoms; 2nd, of the pathological changes found after death.

The most constant and best known of all the symptoms of carbolic intoxication is a peculiar condition of the urine, causing it to assume an olive-green colour either when passed or after exposure to the air. The urine passed the morning after the operation appeared normal, and was unfortunately not preserved, and none was afterwards excreted. This suppression of urine has not hitherto been recorded in carbolic poisoning, but is not inconsistent with our knowledge of the known influence of this poison upon the kidney, while the minute changes found in the kidney, coupled with the copious and oft repeated vomiting, not only of the food taken but of large quantities of watery fluid as well, afford some, though not an entirely satisfactory, pathological explanation of the occurrence. Next to this peculiar change in the urine vomiting is the most characteristic symptom of the toxic action of carbolic acid, and the vomited matter is abundant and watery, as was the case with this patient. Diarrhœa has been less often noted, but the fact of the passage of loose orange-coloured stools in cases of poisoning by the mouth has been noted.

The nervous symptoms; viz. the pallor, collapse, muscular rigidity, restlessness, loss of consciousness, and delirium, are just those observed in cases of carbolic poisoning; there was no twitching as has been sometimes noted, and the coma did not come on so rapidly as in many cases. The effect of the poison upon the cardiac and respiratory functions was very marked and special. The pulse was quickened and

weakened, but under active stimulation the heart recovered its power to some extent, and the empty condition of the left side of the heart shows that death did not occur from failure of cardiac action. On the other hand, respiration was very rapid and distressed, although air entered both lungs freely and the patient lay flat on his back; and this was unaffected by stimulating treatment; death was preceded, however, by choking, gasping respiration, and the post-mortem evidence is convincing that the immediate cause of death was asphyxia. In artificial carbolic intoxication in animals Husemann and Küster have observed that the animals died asphyxiated, and that when the thorax was opened directly after respiration ceased the heart was found to be still contracting. The pupils have been noticed contracted in some cases, in others dilated, and Küster states that the characteristic symptom is a more or less complete loss of mobility of the iris—whether this was so in the present case was unfortunately not observed. The temperature was normal before the onset of the acute symptoms, and then quickly rose to 100·2°, and remained at that height until just before death, when it fell to 99·6°. Küster found that in animals carbolic acid caused a rise of temperature followed by a fall just before death, except where the quantity of the poison was so great as to produce almost instant death, when no initial rise was noted. Sweating and ptyalism are the only other symptoms observed in carbolic intoxication; they were neither of them present in this case. In the main, then, the symptoms correspond closely with those recognised as characteristic of carbolic intoxication from external application of the acid.

In turning to a consideration of the pathological changes, we are met with the difficulty that, excluding the direct effect of the poison upon the stomach, &c., when taken by the mouth, nothing is known of its effects except the naked eye changes upon the blood. In recorded cases the viscera appeared healthy as in this instance, but, unlike it, were not examined microscopically, so that we can draw but few comparisons. The blood in carbolic poisoning has been described as dark in colour and all fluid, or but very imperfectly coagulated. These facts were noted in the case under consideration. But as the boy died asphyxiated there is nothing peculiar in the colour of the blood, and it is quite possible that the deficient coagulability of the blood and the great congestion of the trachea and bronchi, with excess of

mucous secretion, are to be attributed to the asphyxia rather than to any special action of the poison. The thrombosis of the minute pulmonary vessels, and of a few of those of the kidney, as well as the inflammation of the stomach, lungs, and kidneys, has not been recorded before, but its absence has never been proved, for no microscopical examination of the apparently healthy organs has been made. But there are some facts that may with advantage be referred to here, as they give some support to the view that similar changes have been produced in other cases of undoubted carbolic intoxication. The first is the frequent occurrence of vomiting, dysphagia, and furred tongue; indeed, several observers have stated that these symptoms were explained by supposing that the acid caused gastric catarrh, although Küster opposes this view and attributes them to a central nervous influence. A similar chain of reasoning applies to the respiratory difficulty. But more to the point are the facts that in a case of Dr. Machin's (*British Medical Journal*, 1868, I.), where the acid was accidentally applied to the skin, symptoms of congestion of the lung were noticed before death (no autopsy was made), and that pneumonia has occurred in several cases of poisoning by the mouth; of course the latter cases are open to the objection that the pneumonia resulted from inhalation of the irritating vapour. The special influence of carbolic acid upon the urine has long been known, and an action upon the kidney is not surprising, but more than that, Salkowski found albumen and renal epithelium in the urine in two undoubted cases of carbolic intoxication, while the urine has been found albuminous and even bloody in rabbits poisoned by the acid, and such a fact is almost as good as a microscopical demonstration of the inflammation of the kidneys. From a consideration of the pathology it seems right to affirm that some of the changes found coincide with those hitherto described, while the others harmonise with our knowledge of the effects of carbolic acid. It might be urged that the quantity of carbolic acid absorbed must have been too small to produce such effects as we have described. It must be remembered, however, that children are especially intolerant of carbolic acid, and that individual peculiarity plays a far larger part in the effects produced by a dose of carbolic acid than is the case with most poisons, and we have no evidence to show the minimum fatal dose of the acid in man. As typical examples of the peculiar susceptibility to the toxic effects of the acid in some people, I

may note the case of a lady who was repeatedly made to vomit by dressing a small ulcer of the leg with carbolic lotion; a case of an abscess dressed with carbolised oil (1 to 8), where discolouration of urine, vomiting, and dysphagia occurred after each dressing (Wallace, *British Medical Journal,* 1870, I.), and Küster mentions a case where the temperature rose after each dressing. It may be asked why the symptoms did not come on earlier. The answer is that in all probability the absorption occurred from the skin rather than from the wound; a longer interval still has been noticed in a case of excision of the elbow dressed with carbolic lotion 1 to 50 on bandages, where the symptoms, which were very characteristic, did not come on for 72 hours. (Lightfoot, *British Medical Journal,* 1870, I.)

I would submit therefore that death must be attributed in this case to the poisonous effects of carbolic acid absorbed by the skin from the gauze dressing round the leg: 1st, because of the absence of any other cause of the symptoms; 2nd, because the symptoms and pathological changes, with but few exceptions of no great moment, were those observed in other cases of carbolic intoxication; 3rd, because there are no facts to negative entirely this supposition.

Although the minute changes observed in the stomach, lungs, and kidneys, require independent confirmation, they suggest certain points in relation to this form of intoxication. I think we have decided evidence that carbolic acid, even when absorbed through the skin of the most distant part, has yet a tendency to act upon the mucous membrane of the stomach and set up more or less severe catarrh, in this respect being allied to arsenic. It seems to negative Küster's view that the vomiting, dysphagia, &c., are entirely due to central irritation—more probably one element, at least, in their causation is the gastric catarrh. Küster has explained the respiratory difficulty as due to irritation, and then paralysis of the respiratory centre in the medulla oblongata. Others have maintained that the increased frequency of respiration is in part caused by irritation of the terminals of the vagus, and this view is confirmed by finding minute inflammatory changes in the pulmonary parenchyma. That the fatal result was due to the influence of the acid upon the nervous system, and in particular upon the respiratory centre in the medulla oblongata, I suppose cannot be denied, though the evil effect of the extensive capillary thrombosis in the lungs must have been immense.

The proper treatment for the case would have been to remove the dressing and wash the limb thoroughly immediately the vomiting occurred, and on looking back it appears more than probable that had that been done it might have been successful in saving life.

XLIV.—*A Case of Un-united Fracture of the Olecranon Process, in which Bony Union was obtained by Suture of the Bones.* By WILLIAM MACCORMAC. *Read May* 27, 1881.

CHARLES FRY, æt. 26, a piano tuner, was admitted to hospital under my care on January 3, 1881. Four months previously he fell upon his right elbow. The joint became swollen and painful; he was advised that he was suffering from severe sprain, should apply spirit lotion, and carry his arm in a sling.

When he first applied at St. Thomas's Hospital it was on account of inability to make use of his arm at his trade. The limb was wasted, especially the triceps; there was no power of active extension, nor could the arm be brought into the straight position, though it could be fully flexed. The olecranon was found to be fractured across close to its base, and the fractured portion was separated from the other by upwards of two inches, and immovably fixed to the back of the humerus.

There appeared to be no uniting medium between the fractured parts, as with the finger inserted into the gap in the bone one could distinguish plainly the outlines of the condyles with nothing save skin and fascia interposed.

The comparatively useless and wasted condition of the patient's right arm, the absence of any union, and especially the fixation of the detached portion of the ulna, appeared to me to justify operative interference.

Accordingly on January 6 I made a vertical incision, three inches long, over the centre of the back of the joint, exposing the fractured bone and opening of course into the articulation. There was no trace of uniting material, the fractured surfaces were covered with a smooth fibrous investment. Some membranous adhesions existed not only between the detached olecranon process and the posterior

surface of the condyles, but between the end of the humerus and articulating surface of the ulna. These I dissected out. I then reflected back the periosteum from the fractured ends, cut off a thin layer of bone with a chisel, from the two surfaces, drilled two holes on each side obliquely, through which stout silver wires were passed, and was then able with no excessive amount of traction, when the arm was fully extended, to bring the two surfaces into close apposition. The wires were twisted and cut off so as to project somewhat at the centre of the wound, which was afterwards closed with catgut sutures.

The operation was performed antiseptically, and before closing the wound the joint was thoroughly washed out with carbolic solution 1 in 30. The usual dressings were applied. The first dressing was made on the fifth day, January 10, when the wound was found to be united save where the wire sutures emerged. In 21 days the silver sutures were untwisted and drawn out, and the wound immediately afterwards closed completely.

In 24 days passive movements were begun. In 40 days the patient left the hospital with very good active movement at the elbow-joint, which was daily increasing. There was apparently firm bony union at the seat of fracture.

From first to last the patient suffered no pain, nor inconvenience of any kind. The wound healed without a drop of pus. The temperature rose on one occasion to 99·8°. It was with this exception normal throughout. The patient has now, twenty weeks after operation, as the members may see, perfect power of strong active extension of the joint. The arm cannot be made absolutely straight, but the movements of the elbow otherwise are unimpaired, and the man is able to follow his trade as before.

XLV.—*On two Cases of Chromidrosis in which a blue-black pigment exuded from the skin of the circum-orbital regions.* By T. Colcott Fox, M.B. *Read May* 11, 1881.

KATE L., æt. 18¾ years (exhibited at an earlier meeting of the Society), presented herself amongst the out-patients at the Westminster Hospital in September 1880,

suffering from a conspicuous and symmetrical black pigmentation of the eyelids and a considerable portion of the adjoining cheeks. This girl is a partial deaf-mute, *i.e.* she has been notably, but not completely, deaf from birth, and can only speak a very few words, and those so indistinctly and disconnectedly that it is almost impossible for a stranger to converse with her. Otherwise she is sharp-witted and intelligent, has a good physique and most excellent disposition and character. It is a curious circumstance that the second and fourth children in the family of which Kate L. is the eldest are also partial deaf-mutes, but the remaining nine brothers and sisters are quite healthily developed. The parents are not first cousins, and I can obtain no evidence of any syphilitic taint in any of the family.

The girl, whom I describe to the Society this evening, was in good health until fifteen years of age, when her catamenia appeared for the first time, but since that time she has been constantly ailing with general malaise, severe headaches, and habitual constipation. Her catamenia, after their first appearance, did not recur for several months, then to a very slight extent at various intervals, but at no time has she been regular either as to time or quantity. It is also of interest to note that the constipation is peculiarly obstinate, the bowels remaining unrelieved sometimes for two or three weeks at a time, until medical aid is called in. During these attacks the abdomen gets enormously distended, and there is considerable determination of blood to the face, so that the latter flushes in a notable manner, and perspires freely on any slight extra mental or physical stimulus. She is not an hysterical subject.

The pigmentation of the face was first noticed in September 1880 on the lower lids, whence it gradually spread symmetrically over the upper lids and over part of the cheeks as shown in the water-colour drawing I hand round. (Plate VIII.) As the girl's friends were much frightened at the *bizarre* disfigurement, she applied at the Westminster Hospital in the same month, and was admitted, and in about ten days, when the loaded bowels had been relieved and a more regular habit established, the pigmentation gradually disappeared. On October 9 I saw her again, and the face was quite clear, but she was complaining of constipation and increasing abdominal distension and discomfort, and three days later the pigmentation reappeared precisely

Mintern Bros. Chromo lith.

Dr. Fox's Case of Chromidrosis of the Face.

as before, the catamenial flow being due in a few days. Through the kindness of Dr. Sturges and Dr. Donkin she was placed under observation in the Westminster Hospital again from the middle of October until December 21, and without stating in detail the changes from day to day I may say that the pigmentation always presented pretty much the same hue and was present pretty continuously throughout her stay, but varied from time to time a good deal in intensity, and was decidedly less marked at the catamenial period which recurred every fortnight. The pigmentation seemed, however, to bear a more direct relation to the very obstinate constipation, and was more intense and extended the longer the interval between the relief of the bowels. Another point to be noticed is that whilst the water-colour drawing was being executed in close proximity to a fire, and whilst the patient was much excited, the pigmentation deepened in intensity so markedly as to attract the attention of all present. Beyond a certain strangeness of manner arising from her partial deaf-mutism, and the *bizarre* and unusual nature of the affection, no grounds whatever for suspecting malingering arose, though a look-out was constantly kept, yet to prove its genuine character as far as possible the girl's face was thoroughly cleansed one evening, and she was put to rest suddenly and without notice in a strange bed at a distance from her clothes and belongings, and a special nurse put to watch by her bedside for 36 hours. In the morning the pigment was distinctly seen to be re-accumulating. I may add that the girl always seemed to be much annoyed at the appearance of the pigment, and unless prevented would constantly wash it off.

On January 14, 1881, when I brought the patient to the Society, the bowels had not opened for 20 days, and the pigmentation had been marked for all the later portion of this period. She was for the third time taken into the hospital by Dr. Donkin, and as on the former occasions as soon as the bowels were got into more regular order the pigmentation gradually ceased. On going back to her home there was no recurrence of the pigment for a week, as the bowels acted thrice, but with a return to the old constipated habit the pigment gradually showed again, excepting that it quite disappeared during the next catamenial flow.* The

* Since sending in this paper I find (May 27) that by more sedulously regulating the bowels, the pigment-exudation has been almost entirely checked, and it now appears mostly at the catamenial periods, contrary to what was before observed.—T. C. F.

pigment has not been observed to appear on any other part of the body in this case, nor had any vomit or excreta been pigmented. The urine has always appeared normal to the ordinary tests, but the results of the examination for indican seem to point to a very interesting fact. Mr. Page, of the Physiological Laboratory at University College, who has a very special experience in this matter, very kindly examined two specimens of urine for indican: the one passed when hardly any pigment was noticeable on the face, and the other when the pigment was marked. The result is shown on the pieces of filter paper I pass round, one of which contains a very perceptible quantity of indigo obtained from the urine passed when the pigmentation on the face was marked, and the other apparently none. 'So apparently,' Mr. Page writes me, 'when the blue comes out on the skin there is plenty in the urine, or rather plenty of the substance indican, which furnishes the indigo on decomposition.' By following out Mr. Page's directions I have verified this observation on two occasions.

Considerable difficulty was experienced in collecting sufficient pigment from the face for analysis, and I have had to content myself with microscopical examination. An ordinary hand-glass shows at once that the skin itself is quite normal beyond some occasional general hyperæmia and hyperæsthesia. The pigment lies quite on the surface in the form of granules, and I could never detect any excess of oily matter. It is quite easily cleansed off, especially with a little oil or glycerine, and under the microscope appeared as amorphous plates, most irregular in shape and size, and mostly of a black colour, but in certain incidences of the light some were a deep blue-black, and a few ochreous granules were mixed with them. The granules seemed unaffected by almost all reagents hot or cold, such as caustic potash, chloroform, acetic and nitric acids, and turpentine. On examining them in glycerine they showed a deep blue-black hue; with cold sulphuric acid they appeared unaffected, but on warming the slide they began to dissolve and became surrounded with a beautiful purple halo, which gradually changed into a dull bistre tint. In short, when I came to compare the characters with those described as appertaining to the pigment granules in the recorded cases of black chromidrosis, I found the most remarkable agreement in all particulars, and there can be no question that the pigment in all is similar in nature.

The second case was sent me on February 17, 1881, by my friend Dr. Donkin, who has given me most kind aid throughout the investigation of these cases. Julia I., æt. 18 years, a short stout girl of healthy appearance, applied at the Westminster Hospital for the relief of an incessant, dry, barking cough, and hoarse voice, with loss of weight. She is dyspeptic, suffers from constipation and an enormously distended abdomen, and in the mornings spits up frequently a very little dark blood. She states that she is very sick at times and goes off into hysterics. Her catamenia are very irregular. The black powdery pigmentation began on the lower lids about nine months ago very slightly, and has been getting more frequent, deeper in colour, and more extended. It comes on usually in the evening—especially, she states, if she sits before a fire or romps about and gets hot or excited. It is sure to appear over the eyelids and adjoining portion of the cheeks if she is not unwell when the period comes round, and then her face gets so black she is ashamed to leave the house for two or three days. The constipation is not so marked or prolonged in this patient, and the pigmentation seems to be of much more fitful occurrence. She states that she had an aunt, who died at the age of 35, in whom marked pigmentation occurred which prevented her going out for a week at a time. The chemical and physical characters of the pigment are identical with those in the other case.

Remarks.—I have ventured to bring these two cases before the Society, firstly because, to judge by the published records, chromidrosis seems to be of very unusual occurrence especially in England, and secondly because the reality of such an affection has been very keenly debated at one time or another, more particularly in France, where the greater number of the cases have been described.

Perhaps considering that the affection has only been once before discussed by a London Society, and that as long ago as 1845 in connection with a case in which Sir Benjamin Brodie was interested, it will be well for me to remind the members shortly of the history of chromidrosis. The first case was recorded by Dr. Yonge of Plymouth in the 'Philosophical Transactions' in 1709, and since that date many other cases have been described in Ireland and in France, and some neighbouring parts of the Continent. In 1864 Dr. le Roy de Méricourt, who himself met with 7 cases at Brest, was able to collect 30 cases two of which are entered

as simulated. In 1869 Dr. Arthur Wynne Foot, now the distinguished President of the Pathological Society of Dublin, to whom I am under a deep debt of obligation for allowing me this evening to illustrate my paper with his drawings of chromidrosis, tabulated 36 genuine cases, and added two others occurring in his own experience, and subsequently a third, making 39 in all. Up to the time of writing this paper I have only been able to find five others, three in women, viz. a very remarkable case under Dr. Elliotson's observation in 1857 (*Med. Times and Gaz.*, 1857), and one recorded by Delthil (*La France Méd.*, March 1877), and one by Camuset (*Gaz. des Hôp.*, 1879, p. 781), and two in men—one by Kollmann (*Lond. Med. Record*), and one by Hoffmann (*Wiener Med. Woch*, No. 13, 1873). I have no intention of giving anything like an exhaustive account of the affection, but will notice some of the main features, and refer those interested to the elaborate monographs of de Méricourt and Foot.

Of these 44 cases 38 have been in females and 6 in males. Dr. Foot found the mean age of 34 females to be 22 years, although the majority were about puberty, and the extreme ages ranged from 15 to 57 years of age. Hysteria showed itself in some, but as a rule it was not a marked characteristic. In 29 cases 10 were married and 19 unmarried, but marriage does not appear to have exercised a beneficial effect on those married during the existence of the pigmentation. In one case it recurred with successive pregnancies, and in another greatly diminished during lactation. All ranks of life, from the duchess to the seamstress, are liable to it. It may be said that there is almost invariably a deterioration of the health and a general debility antecedent to the appearance of the pigmentation, and the uterine functions in the females are disordered. Headache, dyspepsia, chloro-anæmia, amenorrhœa, dysmenorrhœa, are very common, but the pigmentation is not in direct relation with these disorders, because the catamenia may be quite regular, or have ceased to appear, or be disordered in different ways, yet sometimes pigmentation is worse, sometimes better at the periods. From observation of my own cases and a study of the records, I wish especially to insist on the prevalence of dyspepsia and constipation. The pigmentation has been known to last off and on for ten years, and in several cases the cessation of the exudation has corresponded with a return to health.

'The usual situation for the first appearance of chromidrosis is the lower eyelids; then in order of frequency the upper lids, the cheeks, forehead, side of nose, whole face, sternal region, chest, abdomen, greater part of the front of the body, the back of the hands. The ears, at least their concave surface, have never been observed to be affected, nor has the posterior aspect of the trunk. In by far the greater number of cases the discolouration commences on the lower eyelids, generally at their inner borders; when the four lids are affected, the two lower are much more coloured than the two upper; the exudation is almost always symmetrical, though to this rule there are exceptions; the colour is very liable to be intermittent in its appearance, and is liable to reappear after a long absence, and when it has been apparently cured; it generally returns after the reception of some mental or bodily shock, or some deterioration of health. The formation of the colour is sometimes very rapid—it may be formed two or three, or five or six times, in the twenty-four hours. . . . Whatever other part of the body may be affected, some part of the face is almost always first, and principally so.' The reason why the anterior surface of the trunk is thus selected appears to be its more delicate anatomical structure, and the pigment appears to be so predominant in the eyelids and adjacent portions of the face because of the anatomical delicacy and rich vascular and sudoriparous gland supply of these parts, for it has been observed over and over again that anything which determines the blood to the face in these cases, such as emotion, posture, change of temperature and so on, immensely increases the pigmentation. To a certain extent also if the exudation is checked in one situation it may re-appear in another. But not only does the pigment appear on the surface of the skin, but in several cases has been noted to be ejected from the stomach, bowels, and kidneys. Thus in Billard's there was a vomit as in hæmatemesis, and also some blue pigment; in Teevan and Brodie's case black pigment was noticed in the vomit, fæces and urine, but at these times it left the face; in Neligan's case reddish brown matter was vomited at one time and black at another, and in Professor Law's case there was colouring matter vomited, whilst in others hæmoptysis, apparently vicarious, was noted.

The pigment varies as widely in shade of colour as in amount exuded. In the majority of cases it appears quite a black powder, like Indian ink, when casually examined, but

some shade of blue is very common, from azure to a blue black, and indeed from microscopic examination it becomes a question whether in the apparently black cases the pigment is not really a very deep blue. Further, the pigment may be yellowish or ochreish in colour, or appear violet or olive-green, or by the microscope ochreous granules may be detected mixed with the black. Moreover, in the same case at different times the pigment may change in colour under observation, either deepening in contact with air from blue to black, or being at different times some shade of blue, ochre or black. This is beyond question and is very significant. In two cases (Bousquet's and one of de Méricourt's), the pigment was blue at first, deepening to black; in another case it was blue at one time and afterwards ochreous (Cabasse), and in a fourth (Lecat), yellow first and then black.

I come now to the question of the nature of the pigment. In de Méricourt's essay will be found complete accounts of the elaborate examinations into the chemical and physical properties of the pigment as conducted by himself, Gubler, Charles Robin, Ordonnez and others, undertaken with the express purpose of comparing it with the many varieties of carbon such as powdered wood, charcoals, lampblack, suet, graphite and so on, that are so widely in use, and also with indigo, Prussian blue, &c. Without entering into the details we may say that all these investigations concur in incontestably proving that the pigment of chromidrosis—and it is remarkable how constant the characters of the pigment are excepting as to colour—is not due to the external application of any ordinary cosmetique or powder, but is a peculiar substance with remarkable characteristics. As Ordonnez expresses it, the pigment differs in a chemical point of view from all black or deeply coloured mineral or vegetable powders, to which it bears a superficial resemblance. Kœberlé of Strasbourg in 1858 reported of a blue pigment which had been pronounced to be an iron salt, that it was very similar if not identical with indigo blue, and suggested that a substance was exuded in an analogous form to the soluble indigo white of vegetables, and that the insoluble pigment was deposited by the well-known process of oxidation of the white indigo. Charles Robin compared it with the cyanourine of Braconnot, or with the indigogenous substance formed in the urine under certain circumstances, which may take on a blue, black, green, or violet tint. Ordonnez

thought there was a trace of iron present, and considered it bore striking analogies with melanin. Several other analyses have been made; thus Owen Rees reported that the pigment in Teevan's case was composed mainly of carbon with some iron in unknown combination, some fatty and albuminous matter, and some alkaline phosphates and chlorides, and carbonate of lime. In Elliotson's case Professor Rodgers found 'almost pure carbon contaminated by traces of fatty matter,' and in Kollmann's case, where the patient had been taking much iron, Scherer found the blue colour due to the proto-sulphate of iron.

Now in connection with this pigment we cannot fail to call to mind the fact that, apart from the ordinary colouring matter of the urine, there occurs in the latter fluid under certain conditions differently-coloured varieties of indigo formed by the gradual oxidation of indican. Dr. Heinemann, in Seguin's 'Archives of Medicine' for August 1880, has given the latest account of what is known of indican. He says that it is a conjugated compound body composed of indigo-blue, indigo-red, indiglucin, leucine, and acids, and that under the action of certain ferments and chemical agents it may be split up in the urine and elsewhere. Its source, according to Kühne, is from indol, which gives the scent to the fæces and which is formed by the action of the pancreatic juices on albuminous bodies in the small intestine, whence it is absorbed and eliminated as indican by the kidneys. How far the blood may be an additional source is doubtful. Indican is a constant organic constituent of urine, and in 396 cases tabulated by Heinemann and investigated for indican it was present in all but 14, though in 149 cases the urine was normal. The most marked increase of indican occurs under a flesh diet, and in diseases affecting the alimentary canal, mostly conditions retarding peristalsis and favouring the absorption of indol, such as dyspepsia, gastro-duodenitis, chronic constipation, intussusception, peritonitis, lead poisoning, but also in enteric fever, diarrhœa, and the early stages of recovery from cholera collapse; also in suppuration, and some altered blood states of an ill-defined nature, and some nervous diseases, as insanity, Addison's disease, progressive muscular atrophy and paraplegia; lastly, in chronic Bright's and internal malignant disease.

Besides this occurrence in the urine it is well known that various discharges may be coloured, such as pus, milk, the contents of eczema vesicles, dropsical fluids, vomit, fæces,

&c., and Herapath has shown (*Med. Times and Gazette*, Sept. 24, 1864) that the blue colour, in some cases at least of blue suppuration, is due to indigo.

From these considerations it appears probable that under some circumstances the sweat glands of certain portions of the body assist the kidneys in eliminating this indican, which rapidly by contact with the air becomes oxidised into the differently-coloured indigos. I especially mention the sweat glands because there seems little doubt that they are the channel by which the pigment exudes, and of this fact the chief proofs are the anatomical structure of the eyelids, the absence of any excess of fatty matter, the well-known occurrence of sweating localised to the face, and the fact that droplets of fluid have been seen to collect and course down the face.*

There only remains now the question of malingering to discuss. From the fact of such a *bizarre* pigmentation occurring so predominantly in young and usually unmarried females, who were in deranged health, great scepticism has naturally been excited in many quarters as to the genuine character of this affection, but not, it is to be noted, as a rule amongst those who have had the cases immediately under their care. Still everyone, one would think, must feel some scepticism when first meeting with such a case. After carefully considering all the published cases, and attentively studying the two instances that have come under my own notice, I have not a shadow of doubt as to the genuine character of chromidrosis. Curiously enough no one seems to have questioned the reality of the affection in the 11 cases collected by Dr. Banks in 1858, but following the publication of de Méricourt's cases in France marked scepticism and incredulity were expressed in Paris in spite of the advocacy of Charles Robin and Hardy. It will be impossible in this place to collect all the arguments and proofs deducible from the published cases in favour of the genuine character of the affection, but setting aside the least satisfactory, viz. those of a moral nature, I may just mention the more conclusive. Firstly, there is such an extraordinary agreement in the physical and chemical characters of the pigment in all save uniformity of colour, that it is impossible

* In Lecat's case black sweat drops ran down the face. In Billard's case there was suppression of the menses and copious sweats, so that with any determination of blood to the skin the blue hue changed like a chameleon. Bousquet watched the oozing of blue droplets becoming quite black, and Elliotson says that any emotion would cause it to flow copiously.

to resist the conclusion that in all the cases it is identical, and further that it is no ordinary vegetable or mineral substance, but an indigogenous compound, though the variation in colour is in itself strongly against the theory of external application. Secondly, the pigment has been seen to reappear over and over again at intervals of a few minutes to 24 hours after the thorough cleansing of the part, and this under the observation of distinguished and critical, and indeed sceptical physicians (Teevan,* Bousquet, de Méricourt, Elliotson, Kirchberg, de Mœrloose, &c.), who were certain no deception was practised. Thirdly, the reality has been proved as far as possible by direct experiment, for the cleansed face has been in one case covered with a sealed gauze headdress (Cabasse and Magnin), in another with sealed bandages (Baron Larrey, in one of de Méricourt's cases), and in a third with elastic collodion, and in all the pigment has been re-exuded, and the test has been conclusive to the experimenters. The incredulous rely on two cases where the fraud was believed to have been exposed, but in my opinion they are most inconclusive. Dr. Duchenne was very triumphant because, having found the pedicle of a wart not coloured blue like the surrounding skin, he took the woman before the mayor of the town, and obtained a confession of imposture from her after very prolonged threatenings, and Professor Spring of Liège was equally exultant because he thought the pigment appeared on the outer surface of some endosmotic ordinary collodion which had been applied, and because the young lady was cured after a sojourn at the seaside, although she had baffled all other attempts at detection, and although all the other physicians of the neighbourhood having watched the pigment exude on several occasions were quite convinced of the reality of the affection. Such being all the proof of malingering which is forthcoming, I think, in face of the very strong body of favourable evidence which now exists, it devolves on the sceptical to prove their views; and one of my objects in bringing forward these two cases this evening is to throw down the challenge.

* In Teevan's case which Sir B. Brodie brought before the Medico-Chirurgical Society, Dr. Hodgkin was one of those present when the pigment was seen to exude from the cleansed face, and he vouched for the authenticity of the case.

XLVI.—*Case in which the Breast was removed on account of incurable Eczema of Nipple (malignant papillary dermatitis), and afterwards found to be affected by Cancer.* By George Lawson. *Read May* 27, 1881.

IN the last volume of the 'Clinical Transactions,' vol. xiii. p. 37, there is the record of a case of cancer of the breast, following long standing eczema of the nipple, which I read before the Society on October 24, 1879.

I then said it became a question 'whether in cases of eczema of the nipple which has resisted all treatment, we are not justified in advising that the breast should be removed in anticipation of a disease which does not exist.'

Very shortly after this, I saw a patient of my friend Dr. Propert, who had suffered from extensive eczema of the nipple for more than twelve months, which had resisted all treatment and was extending. Considering the extent of the eczema, that it would not yield to treatment and the great annoyance it caused the patient, I advised that the breast should be removed. The patient was then seen by Sir James Paget, and he concurred in the opinion I had given. I accordingly excised the breast, and the patient made a satisfactory recovery. The breast is now in the museum of the College of Surgeons.

Dr. Thin kindly examined some sections of the breast, and the following is his report of his examination.

'I examined a portion of the tumour referred to, which I cut from the excised breast, after it had been for some months in spirit at the museum of the College of Surgeons. When the breast was divided by the knife, it seemed to be composed entirely of fat permeated by streaks of connective tissue. Under the microscope these streaks were seen to be composed of white fibrous tissue in which were lodged epithelial tubes of various sizes, having a small columnar epithelium, on the border of the tube.

'An accurate idea of the condition of the breast will be best given by stating that the mass was composed of structures which justify the term *Adeno-lipoma.*

'The skin had all the characters which have distinguished this affection in previous cases, and was the seat of a morbid process which may be conveniently described as a *Malignant Papillary Dermatitis of the Nipple.* As in previous cases, many of the cells of the rete mucosum had undergone degenera-

tion, and there was destruction of the connective tissue of the papillary layer, with a stratum of dense cell-infiltration.' *

History of Case.—Miss - ——, æt. 58, has suffered from severe eczema of the nipple and adjacent skin for more than twelve months, which has continued to increase notwithstanding every form of treatment which has been tried to arrest its progress. The patient is of a gouty family, and has suffered frequently and severely from gout. Two sisters, an aunt, and a niece have had cancer.

The patch of eczema includes the nipple and about two inches of the surrounding skin. The whole of the eczematous patch is distinctly raised above the level of the adjacent skin, and in this respect almost resembles a new growth. With the exception of the eczema, which has caused a great amount of irritation, the patient has suffered no pain in the breast, and with the exception of the frequent attacks of gout, she has always enjoyed good health. There are no enlarged glands to be detected in the axilla. Taking into account that the eczema was incurable, that it was causing constant suffering, and that experience has shown that this form of eczema is a frequent precursor of cancer, I advised that the breast should be removed. In January 1880, I excised the breast, and the patient has since continued well.

XLVII.—*Report of the Committee on Excision of the Hip-joint. Read May* 13, 1881.

THIS Committee was appointed in the course of last session to enquire into the value of excision as a means of treating disease of the hip-joint in childhood, and it was suggested by the President that the report should have especial reference to the following points:

I. The indications for resorting to the operation.

II. The results obtained from the operation as to—

(*a.*) Mortality.

(*b.*) The after condition of the limb.

III. The method of operating as to—

(*a.*) The amount of bone removed.

(*b.*) The use of antiseptics.

* For the microscopical appearances of the tumour, see *Trans. of Pathological Society*, vol. xxxii.

IV. The nature of the disease, whether scrofulous or not.

The report is founded on—

I. Two papers on excision of the hip-joint, read by Mr. Croft before this Society, and published in the 13th volume of the Transactions—the second paper containing the history of 45 cases.

II. An analysis of all the cases—401 in number—admitted into the Alexandra Hospital for Hip Disease in Childhood, between the opening of the institution in 1867, and the end of the year 1879. Of these 401 cases, 384 were treated by prolonged rest and weight-extension, and the opening of abcesses, no operative interference being adopted. In the remaining 17 the operation either of excision or amputation was performed after the patients were removed* to the Hospital for Sick Children or elsewhere.

III. The examination of 37 specimens derived from Mr. Croft's cases, and of 19 collected from other sources.

IV. The results of excision, as far as they could be traced in 158 cases contributed by Mr. Bryant and Mr. Baker, or extracted from the records of University College and the Middlesex Hospitals.

Mr. Croft's cases are tabulated in the papers already mentioned in the 'Clinical Society's Transactions.'

The cases treated in the Alexandra Hospital are arranged in two tables placed at the end of this report, the first showing the general results, the second giving an account of the cases that ended fatally.

MR. CROFT'S TABLES.†

THESE cases may be grouped as—

A. Verified cures, inspected by the Sub-Committee, 14, or 31 per cent.; B. Non-verified cures, 5,‡ or 11 per cent.; C. Cases still incomplete, 8, or 18 per cent.; D. Deaths, 18, or 40 per cent.

* In the Alexandra Hospital cases are kept under treatment in the wards as long as rest and extension are required, and are afterwards sent to the Convalescent Branch, or are watched as out-patients. If an operation is called for, the case is transferred to some other hospital.

† *Clin. Soc. Trans.* vol. xiii. ‡ One since died of phthisis.

The cause of death in these fatal cases was as follows:—

Deaths due to the Operation.

Pyæmia	4			
Erysipelas	1			
Thrombosis	1			
Hæmorrhage after exploration	1			
	7, or 39 per cent. on the total of 18 deaths.			
Tubercular disease	4, or 22	"	"	"
Tubercular meningitis	2, or 11	"	"	"
Albuminoid disease	3, or 17	"	"	"
Intercurrent disease (1 diphtheria: 1 hæmorrhage from bowels)	2, or 11	"	"	"

The mortality of 40 per cent. on the total of 45 cases is thus made up:—

Resulting from the operation	15·6
Tubercular disease	9·0
Tubercular meningitis	4·4
Albuminoid disease	6·6
Intercurrent disease	4·4

If the deaths due to intercurrent disease are excluded, the mortality amounts to 35·5 per cent.

In 14 cases of verified cure, the average duration of the disease before admission was 1¼ year; the average period of treatment, 1¾ year; the average total duration, 3 years.

The average total duration of 14 fatal cases was 2¾ years. In 9 cases, in which the patients died of the disease, and not directly from the operations or any intercurrent disease, the average duration of life after excision of the joint was 1 year and 10 months.

In 17 cases of recovery the average duration of the disease before the operation was performed was 1 year and 8 months.

In 11 cases, in which the disease continued to progress after the operation, and ultimately proved fatal, the average duration before the operation was 1 year and 5 months.

In a total of 32 cases, 10 were operated on before the disease had lasted 6 months. Of these, 6 died and 4 recovered—that is, 60 and 40 per cent. respectively.

Twenty-two were operated on after the disease had lasted more than six months, and of these 9 died and 13 recovered—that is, 41 and 59 per cent. respectively.

Condition of the Limb after Excision.

(*a*) As to shortening.—In 13 verified cases the average shortening was $2\frac{3}{4}$ inches; the minimum being $\frac{5}{8}$ inch, and the maximum 6 inches.

(*b*) As to movement.—In 13 cases seen by the Sub-Committee, movement was free in 7, very limited in 4, and absent in 2.

(*c*) As to function.—Two could stand and hop on the excised limb; 4 could stand firmly; 4 could stand, but not firmly; 2 could not stand. In one case the condition of the limb as to function was not noted.

Hip Hospital Tables.

The Hospital for Hip Disease furnishes a total of 401 cases. Seventeen of these were subjected to the operation either of excision or amputation, and may therefore be excluded from the present inquiry, so that there remain 384 cases for analysis.

Of these 384 cases, 100 (26 per cent.) are known to have died, while the remaining 284 may be classified in a manner similar to that adopted in dealing with Mr. Croft's cases.

		Totals	Percentage on 284	Percentage on 384
A. *Cases of cure, verified by Sub-Committee*:—				
Good cures	69			
Moderately good cures	11			
Cures with considerable lameness	3			
	—	83	29·2	21·6
B. *Cases reported cured to Sub-Committee*:—				
Good cures	25			
Moderate cures	3			
Cures with considerable lameness	11			
Condition of limb not specified	18			
	—	57	20·1	14·8
C. *Cases in process of cure still under observation*:—		12	4·22	3·1
D. *Untraced cases*:—				
(*a*) Apparently cured on discharge	24			
(*b*) Apparently convalescent	20			
(*c*) In progress on discharge	50			
	—	94	33·1	24·4
E. *Indefinite cases*		12	4·22	3·1
F. *Cases still under treatment*		23	8·1	6·
G. *Still under treatment, apparently incurable*		3	1·06	·8
		284		

In order to compare the results obtained by rest and extension with those following excision, the cases in which suppuration occurred are separated in the following statement from those which did not suppurate.

Suppurations.

Of the total of 401 cases, 277, or 69 per cent., were cases of suppuration; 124, or 31 per cent., were cases of non-suppuration.

These cases of suppuration are distributed in the different classes in the following manner:—

	Suppurations	Non-suppurations
A. Verified cures	52	31
B. Reported cures	33	24
C. In process of cure still under observation	7	5
D. Untraced:—		
(*a*) Apparently cured on discharge	9	15
(*b*) Apparently convalescent "	9	11
(*c*) In progress on discharge	41	9
E. Indefinite cases	5	7
F. Cases still under treatment	14	9
G. Under treatment, apparently incurable	3	0
H. Deaths	87	13
I. Operations	17	0
	277	124

Excluding cases of operation, the number of cases of suppuration amount to 260, and are composed of

Cures or convalescents	110 (A. B. C. and (*a*), (*b*) of D.)
Cases in which disease is still in progress, or was so at the date of discharge	63 ((*c*) of D. and E. F. G.)
Deaths	87 (H.)

These figures yield a percentage of 42·3 of cures or convalescents, 24·2 of incomplete cases, and 33·5 of deaths. Or, considering the cases of cure to be restricted to A and B, 32·8 of all the cases of suppuration are known to have been cured.

Ninety-six cases of suppuration ended fatally; 16 died of meningitis. One of these had long recovered from hip disease. Two were apparently cured, and 3 were apparently convalescent. In the remaining 10, the joint disease was still in progress.

Twenty died of albuminuria and dropsy. The average

total duration of 13 of these cases was 5 years; the average duration before admission being 2 years.

Three died of albuminuria and phthisis.

Five died of phthisis; in one of these the joint-disease was apparently quiescent.

Nine cases died of exhaustion, two being complicated with obstinate diarrhœa, and one with abscess, communicating with the bowel.

Two cases died of erysipelas, and one of pyæmia.

Twenty-four cases died from unknown causes. In 2 of these the joint-disease was cured; in 1 abscess had closed, and the child was convalescent; of the remaining 21, 19 were discharged as incurable, while in 2 the condition on discharge is not specified.

In 8 of the 21 cases the average duration of the disease was 3½ years; the average duration before admission being 1 year.

Seven cases died of causes not attributable to the disease. Two of Bright's disease, following exanthemata; 2 of croup, or diphtheria; 1 of double pneumonia; 1 of mesenteric disease; and 1 of exhaustion, after chicken-pox.

Nine cases died after operation. These cases were operated on after their discharge, and no particulars could be obtained.

Thus, in a total of 277 cases of suppuration, there were 96 deaths, that is, 34·3 per cent.; while, if the 9 operation cases are excluded, the numbers are 87 deaths in 260 cases, a percentage of 33·46; or, excluding deaths not attributable to the disease (7), there are 253 cases, with 80 deaths—*i.e.* 31·6 per cent. Excluding, also, 3 cases dying at a considerable period after apparent cure of the hip-disease, the mortality is 30·4.

General analysis of the 96 deaths after suppuration:—

Meningitis	16·7
Albuminuria and dropsy	20·8
Phthisis	5·2
Phthisis and albuminuria	3·1
Exhaustion	9·4
Erysipelas and pyæmia	3·1
Causes not connected with the disease	7·3
After operations	9·4
Unknown	25·0 (20 per cent. of which were discharged as incurable.)

The 87 fatal cases (9 after operations being excluded) may be thrown into four principal classes:—

(I.) Those from meningitis	16	6·15 per cent. on 260 cases.
(II.) Those due directly to the disease, including—		
Albuminuria and dropsy	20	50, or 19·23 per cent.
Exhaustion	9	
Discharged incurable	21	
(III.) Those complicated with other diseases—		
With phthisis	5	11, or 4·23 per cent.
„ phthisis and dropsy	3	
„ erysipelas and pyæmia	3	
(IV.) Those unconnected with the disease, or in which the disease was apparently cured.		10, or 3·85 per cent.

Duration of the Disease in Cases of Suppuration.

In 39 verified cures the average duration before admission was 1½ year; period of treatment, 2½ years; total duration, 4 years. In 18 reported cures, average before admission, 2 years; period of treatment, 2¼ years; total duration, 4¼ years. In 60 cases ending fatally, average before admission, 1¾ year; period of treatment, 1½ year; total duration, 3¼ years.

Condition of the Limb in Cases that had Suppurated.

In 33 cases examined by the Sub-Committee, and in which the condition of the limb as to movement was noted, 8 were fixed, 12 had slight movement, 9 had fair or good movement, 3 had very free movement, and 1 had perfect movement.

Condition of the Limb as to Lameness and Shortening in 37 Cases of Suppuration.

Six patients walked with a scarcely perceptible limp, 22 walked with only a slight limp, 7 walked with much limp, and 2 were very lame.

In 33 in which the amount of shortening was noticed, 24 cases of good cure showed an average shortening of 1¼ inch; 2 cases of good cure showed no shortening; 7 moderate cures showed an average shortening of 3¼ inches.

The severity of the suppuration in these cases is shown by the fact that, of 47 instances, there were 14 which showed 1 cicatrix, 7 which showed 2, and 25 which showed several. In one case of double disease there were one on the right side and several on the left.

Cases of Non-Suppuration.

The cases in which no suppuration occurred amount to 124, and are composed of 86 cures or convalescents, 25 cases

still in progress, or which were so when discharged, and 13 deaths.

These figures show a percentage in cases of non-suppuration as compared with cases of suppuration of

Cures or convalescents	69·3	as compared with	42·5
Incomplete cases .	20·2	" "	24·3
Deaths . . .	10·5	" "	33·2

Or, restricting the cures to classes A and B (that is, excluding the untraced cures and convalescents), 48·4 per cent. of cases of non-suppuration are known to have been cured, as compared with 32·8 per cent. in cases of suppuration.

Analysis of Cases of Non-Suppuration ending Fatally.

These amount to 13, or 10·5 per cent., and were due to the following causes:—

Meningitis	7
Phthisis	1
Tubercular pneumonia	1
Croup	1
Intercurrent disease (nature unknown) .	1
Cause unknown	2

The 7 meningitis cases give a percentage of 5·6 on 124 cases of non-suppuration, as compared with 6·1 on the cases in which suppuration occurred.

The information to be obtained from the preceding pages may be summarised under the following headings.

I. The proportion of recoveries to cases that ended fatally (*a*) after excision; (*b*) when rest and weight-extension only were employed.

II. The causes of death.

III. The period occupied by treatment.

IV. The subsequent condition of the limb.

With regard to the proportion of recoveries to cases that ended fatally after excision, the 45 cases in Mr. Croft's tables include—

19 cases, or 42 per cent. of recoveries.
18 cases, or 40 per cent. of deaths.
8 cases, or 18 per cent. still incomplete.

The mortality of 40 per cent. on the total of 45 cases, is thus made up—

15·6 resulting from the operation.
13·4 from some form of tubercular disease.
6·6 from albuminoid disease.
4·4 from causes unconnected with the joint disease.

If the deaths unconnected with the disease are excluded, the mortality amounts to 35·5 per cent. The average period of treatment in cases of recovery was 1¾ year, while the average total duration in 14 cases was 3 years.

The condition of the limb in 13 of these cases was noted, first as to shortening, and secondly as to movement; and it was found that the average shortening amounted to 2¾ inches, while the cases in which there were free movement, limited movement, and a fixed joint were in the proportion of 11, 6, and 3.

Turning now to the results obtained in 260 cases of suppuration treated at the Hospital for Hip Disease by rest and extension only, the committee find that—

42·3 per cent. were cured or convalescent on discharge.
33·5 per cent. died.
24·2 per cent. were incomplete cases.

Of the 42 per cent. 33 per cent. are known to have remained well for a considerable period after their discharge.

The mortality of 33·5 per cent. is made up of—

20·4 resulting from the disease.
9·2 from some form of tubercular disease.
3·9 from causes unconnected with the disease.

If the deaths from causes unconnected with the disease be excluded, and the mortality is calculated without reference to them, it amounts to 30·4 per cent.

The average period of treatment was found to be 2½ years in cases of recovery, and 1½ year in cases that died.

The average total duration of disease in cases of recovery amounted to rather more than 4 years.

As to the condition of the limb, it was found that in 33 cases the average shortening—

In 24 good cases was 1¼ inch:
„ 7 moderately good cases 3¼ inches: while
„ 2 there was no shortening.

The cases in which there was free movement, limited movement, and a fixed joint respectively, were in the proportion of 5, 4½, and 3.

In respect to the power of walking it was found that out of 35 cases—

30 walked with slight, or no limp.
5 walked with considerable limp.

The remaining cases in the table (124 in number) were instances of non-suppuration, and are composed of—

Cures or convalescents 69·3 per cent., as compared with 42·3 of suppurating cases.

Incomplete cases 20·2 per cent., as compared with 24·2 of suppurating cases.

Deaths 10·5 per cent., as compared with 33·5 of suppurating cases.

Of these cases 48·4 per cent. are known to have remained well for a considerable time after their discharge, as compared with 33 per cent. in cases of suppuration.

The deaths from tubercular disease amount to 7 per cent. in a total mortality of 10·5 per cent.

The average total duration in cases of recovery was rather less than 3 years; while the cases in which there was free movement, limited movement, and a fixed joint, were in the proportion of 5, 3, and 3.

In a total of 17 cases the average shortening in 12 good cures was 1 inch, in 3 moderate cures 3¼ inches, while in one there was no shortening, and in one there was ¾ inch of apparent lengthening.

As to the usefulness of the limb, it was found that in 22 cases, there were 19 that walked well, and 3 that had a considerable limp.

In 56 specimens examined by the Committee more or less necrosis had occurred in 33, *i.e.* in 59 per cent. In some of these firm sequestra of considerable size were present, while in others the sequestra consisted merely of small fragments of soft cancellous bone.

Of a total of 203 cases of excision furnished by Mr. Bryant and Mr. Baker, or collected from the records of University College and the Middlesex Hospitals, 29, or 13·7 per cent., proved fatal directly from the operation.

General Conclusions.

I. As to the indications for resorting to the operation of excision.

There are certain conditions which—when developed in the course of hip disease—either preclude recovery, or make recovery improbable unless some operative interference is adopted. These, in the opinion of the Committee, are—

I. Necrosis, and separation of the entire head of the femur, and its conversion into a loose sequestrum.

II. The presence of firm sequestra either in the head or neck of the femur, or in the acetabulum.

III. Extensive caries of the femur, or the pelvis, leading to prolonged suppuration and the formation of sinuses.

IV. Intra-pelvic abscess following disease of the acetabulum.

V. Extensive and old standing synovial disease and ulceration of the articular cartilages, with persistent suppuration.

VI. Displacement of the head of the femur on the dorsum ilii, with chronic sinuses and deformity.

It is difficult, or impossible, in the present state of our knowledge of the subject, to indicate the particular symptoms by which the various conditions just mentioned can be severally recognised. It may, however, be concluded that one of them is present, and that therefore operative interference is called for.

1. When suppuration occurs early—that is, in the course of a few weeks after the onset of the disease—and is accompanied by severe local and constitutional symptoms—pain, night screaming, wasting and high temperature. These symptoms, though they are sometimes due to acute synovitis, followed by ulceration of the articular surfaces, may yet generally be taken to indicate that acute inflammation has resulted in necrosis, either of the entire head, or of some portion either of the head or neck of the femur, or of the acetabulum. In these cases, however, it may not always be necessary to perform a systematic excision, for sequestra can sometimes be found and removed without sacrificing the articulation.

2. When, in a case of suppuration, enlargement of the liver, or albuminuria, indicating the presence of degeneration of the viscera, is detected.

3. When suppuration continues to be free, and when fresh sinuses are formed, or when extensive burrowing is still in progress, and the patient is materially losing ground, in spite of careful treatment by rest, and free drainage.

4. Disease of the pelvis does not, in the opinion of the Committee, preclude excision. On the contrary the operation seems rather to be called for, since in many cases it is the only means by which, when suppuration occurs, efficient drainage can be provided. If swelling can be felt in the pelvis near the floor of the acetabulum, by the finger passed into the bowel, in a case in which there is a sinus freely discharging, and in which the general health is declining, it is probably best to resort to excision. It must, however, be

borne in mind that pelvic disease is always formidable, and that it renders the prospect of recovery, under whatever treatment is adopted, more than usually doubtful.

With respect to the general question of operative interference, the Committee are of opinion that the effect of complete rest and weight or other modes of extension, and the withdrawal of matter, should always be patiently tried in the first instance, and that operative interference should be resorted to only when these means have failed to secure the favourable progress of the case. When matter forms, it is desirable that it should be evacuated without delay, either by aspiration, repeated if necessary, or by incision, and that in the latter case free drainage should be provided.

II. The results obtained, on the one hand by excision, and on the other by rest and extension in the cases tabulated above, show a total mortality in cases treated by excision of 40 per cent. as compared with 33·5 in cases of suppuration treated by rest and extension: or if deaths by causes unconnected with the disease be excluded, the mortality is 37·7 as against 31·6: or excluding cases of death in which the joint affection was cured, the mortality is 35·5 as against 30·4.

The mortality from meningitis in cases treated by excision was found to be 4·4 per cent. as against 6·1 per cent. in cases of suppuration treated by rest and extension, and 5·6 in cases in which no suppuration occurred.

III. On comparing the condition of the limb in cases treated by excision with that resulting after rest and extension, the Committee are of opinion that movement is more frequently present, and is also more extensive in the former class, but that patients often walk insecurely and with considerable limp: while the limb after treatment by rest and extension, though frequently more or less fixed, is more firm and useful for the purposes of progression.

In respect to the amount of bone to be removed, the Committee are of opinion that, as a general rule, only those parts that are involved in the disease should be taken away; and they consider it unadvisable to follow the practice sometimes recommended of dividing the femur below the great trochanter. Except in instances—which are certainly rare—in which it is extensively involved in the disease, the great trochanter should not be removed; and care should be taken to preserve the attachment of the glutei to this part of the femur. This may be done by dividing the muscles in a direction parallel with their fibres, and retracting them after the

manner recommended by Mr. Croft. In cases, however, in which the pelvis is diseased, it is better to remove the trochanter, for if it be left, it is apt to be drawn up into the acetabulum so as to materially interfere with the free escape of pus through the cavity of the joint.

As to the use of 'antiseptic dressings' in the operation of excision of the hip-joint, the Committee have no evidence before them upon which to form any definite opinion.

In respect to the question whether hip disease in childhood is a scrofulous affection, or in what proportion of cases any element of scrofula is present, the Committee have felt themselves unable to offer any decided opinion, since the whole subject of the nature and histological characters of tubercle, and the relation of scrofula to the tubercular diathesis must be pronounced to be still *sub judice.*

The clinical data, however, furnished by Mr. Croft's cases, and by the hospital tables, show that in a total of 429 instances there were 39 in which the patient died of some form of tuberculous disease, a proportion amounting to 9 per cent.

Lastly, as to the pathological specimens examined by the Committee it was found that in nearly 60 per cent. more or less necrosis had occurred. This fact might seem to suggest the necessity of operating in a large proportion of cases of hip disease with suppuration. The Committee, however, desire to point out that while in some cases firm sequestra of considerable size were present, in others the sequestra consisted of small fragments of softened cancellous bone, which might probably have been disintegrated, and thrown off in the discharge.

That this breaking down and discharge of necrosed fragments is not rare, appears to be indicated by the results observed in the hospital cases; in many of which—although there had been prolonged suppuration, and although no sequestra had been either removed or seen to come away—all the sinuses had at length been soundly healed. The severity of the suppuration in many of these cases is shown by the fact that of 47 instances there were 14 which showed one cicatrix, 7 which showed two, and 25 which showed several; while in one case of double disease there were one on the right side and several on the left.

W. MacCormac. J. W. Hulke.
Thomas Bryant. Howard Marsh.
John Croft. R. Lyell.
T. Holmes.

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1867								
1	12 M L	3	9 years	Abscess	Fall, phthisis M's side	Behind trochanter	No	No
2	9 F R	7	2 years	Flexion	Fall, F died of phthisis	.. .. ..	No	No
3	3 M R	2½	8 mths.	.. ..	.. .. ..	Abscess in groin and front thigh	No	No
4	3 M R	2½	8 mths.	Much distortion ..	No phthisis ..	Abscesses upper and inner part of thigh, and elsewhere	.. .. ..	No
5	7 M R	5	2 years	Limb flexed	Fall	Outer side of thigh	.. .. ..	No
6	4 F R	3¾	3 mths.	Limb good position	Phthisis in family	Abscess below Poupart's ligament.	No	No
7	M R	..	2½ years	Limb in good position. Abscess	Spontaneous ..	Abscesses under tensor femoris and inner side of thigh	No	No
8	4½ M R	3–2	1 year	Good position, no abscess	Fall	Diffuse suppuration in thigh	Albuminuria, deep-seated phlebitis of limb	No
9	5 F R	4½	6 mths.	Flexed, no abscess, slight pain	Fall	Upper, inner, and outer side of thigh	.. .. ..	No
10	5½ M L	3½	2 years	Limb adducted, pain on movement	Sequel of scarlet fever	.. .. ..	.. .. ..	No
11	3–8 F R	3	8 mths.	Flexed, no abscess ..	Spontaneous ..	Outer side of thigh	Knee disease ..	No
12	F L	..	1¾ years	Flexion	.. .. ..	Outer side of thigh	No	No
13	4½ F L	3½	1 year	Much flexed	Spontaneous ..	.. .. ..	.. .. ..	No
14	5¾ M R	2	3¾ years	Much flexed, scars of old abscesses, now healed	Spontaneous ..	.. .. ..	Hooping-cough	No
15	8 F R	6	2 years	Pain, good position	Spontaneous, phthisis in family	Front of joint ..	No	No
16	3¾ F L	2¾	1 year	Pain, abscess ..	Sequel of scarlet fever	Outer side of thigh, and below crest of ilium	No	No
1868 AND 1869								
17	4–10 M L	3–10	1 year	Good position, large abscess	Phthisis in family, spontaneous	Front of joint ..	.. .. ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
About 1 year	10 years, with periods of apparent recovery	Weights, abscess tapped	10 mths.	Good position ..	S. C. Limb straight, firmly ankylosed, two sound cicatrices outer side, walks with scarcely a limp. Shortening very slight
4 years	6 years	Straightened under chloroform. Long splint, then weight	..	Limb straight, ½ inch real, 1½ apparent, shortening	Walking when seen 5 years since. Cannot be traced further
1 year 8 mths.	..	Straightened under chloroform. Long splint; weight later	Within 6 mths.	Limb straight; no pain	Removed by parents, cannot be traced
5 years	..	Weight. Abscess allowed to burst	..	Position good; pain if weight is omitted	Parents able to take care of him; can not be traced
14 mths	3 years 2 mths.	.. ..	..	Good position; walking well, no pain	Reported to have had a relapse later. Earning living as bootmaker, cured
7 years	7½ years	Weight. Actual cautery	15 mths.	Position good; walking well	Abscess apparently absorbed in about 3 months. Working as a servant, lame, but no pain, kneels for scrubbing, works hard; seen Oct. 1879
2½ years	..	Abscess opened ..	2½ years	Extreme eversion, ankylosis, sinuses healed	Cannot be traced
..	..	Weight; long splint, abscess tapped	..	Abscess discharging; walking with high boot	Relapsed 2 years after discharge, extensive suppuration. Too ill for excision. Subsequently much improved. S. C. Two inches real shortening, good position, pelvis straight, upwards of a dozen sinuses about thigh and buttock, all healed but 3, trace of albumen, health good, walking with crutches
2 years	..	Weight; abscess opened by incision	8 mths.	Limb straight; one sinus open, others closed	Removed by parents; cannot be traced
..	..	.. ..	..	.. ..	Removed by parents for fretfulness. S. C. Limb sound and straight, but wasted, walks well, slight limp, some movement, one inch short. Working as compositor
7 years	Upwards of 8 years	Forcible straightening, long splint, then weight	6 mths.	Good position, no pain, weeping sinus	Knee disease occurred nine months after admission; suppuration ensued, then gradual repair. S. C. Many scars about hip, one small discharging sinus, limb flexed, walking but lame, knee sound, good movement, health good
..	..	Straightening under chloroform, long splint	1 year	Good position; abscess under part of thigh	Removed by friends to country; cannot be traced
2¾ years	..	Straightened under chloroform, long splint, abscess opened	5 mths.	Good position; health good	Removed by parents, abscess discharging. Reported, June 1880, dead, cause unknown
5 years	Upwards of 9 years	Straightened under chloroform, long splint, weight	..	Incurable, abscesses still discharging	Abscesses followed forcible straightening, and continued to discharge. Left hospital incurable, several strumous ulcers on skin. S. C. Walks well with limp, flexed, two inches shortening, sound cicatrices around hip, can walk 6 to 8 miles, rides as stable boy
12 mths.	..	Abscess opened ..	2¼ years	Disease still active, abscess discharging	Removed by parents; cannot be traced
3¼ years	..	Long splint, abscess opened later, weight, cautery	1 year	Sinus still discharging; general health improved	Cannot be traced
Nearly 7 years	8 years	Abscess opened ..	..	Abscess healed, limb straight, health good	Reported 1880, can walk several miles, wearing high boot, limb flexed, sinus weeping occasionally, apprentice to bootmaker, health good

The letters S. C. *in the last column indicate that the case*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1868 AND 1869								
18	4 M R	3½	9 mths.	Slight flexion, brawny œdema of parts around joint	Fall	Front of joint ..	No	No
19	3–7 F R	2–7	1 year	Flexed, pain on movement	Fall	.. .. ..	Strumous ulcerations about neck	No
20	10 M L	9½	6 mths.	Pain	Injury	Abscess	No	No
21	F R	..	..	Limb wasted, much drawn up	.. .. ..	.. .. ..	.. .. ..	No
22	9 M L	7	2 years	Posture good. No abscess	Fall	Front of thigh ..	No	No
23	6 F L	..	..	Much flexion. No abscess	.. .. ..	.. .. ..	No	No
24	8 F R	7	1 year	Pain; night startings; flexion	Phthisis in family. Spontaneous	.. .. ..	.. .. ..	No
25	4–10 M B	3–4	1 year 6 mths.	Flexion. abscess. Left first attacked	Sequela of measles	Abscesses in both limbs	No	No
26	6 F B	4	R 2 yrs. L 2 mths.	Double flexion; no abscess	.. .. ..	Left thigh ..	Diseased elbow joint, suppuration	No
1870								
27	9 M R	5	4 years	Much flexed; abscess previous to admission	Spontaneous ..	.. .. ..	No	No
28	4 F L	2	2 years	Flexed	Spontaneous ..	.. .. ..	.. .. ..	No
29	10 F L	..	..	.. ..	.. .. ..	Abscess	Measles ..	No
30	5 M L	4½	8 mths.	Flexed; pain ..	.. .. ..	.. .. ..	Measles ..	No
1871								
31	6 M R	5	1 year	Flexion; pain ..	.. .. ..	Abscess	Measles ..	No
32	F R	..	..	Much flexed	.. .. ..	Abscess	.. .. ..	..
33	5½ M R	5	6 mths.	Flexed	Sequela of measles	Abscess	Diseased wrist joint, suppuration	No
34	9 M L	3	6 years	Flexed; previous abscess had healed	Spontaneous ..	Abscess	.. .. ..	No
35	4½ F L	3½	1 year	Abscess	Fall	Groin	Ophthalmia ..	No
36	4½ F L	4	10 mths.	Flexed	Spontaneous ..	.. .. ..	Diseased elbow, afterwards cured by excision	No
37	3½ F L	3	9 mths.	Much flexed; abscess	Spontaneous	.. .. ..	Spinal disease	..

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
6 years	6¾ years	Abscess tapped, weight	1 year	Walking without crutches. 'Cure'	S. C. Has been walking for six years, greatly flexed, a number of sound scars, 4 inches short, health good
6 mths.	..	Long splint to sound limb; weight, cautery	..	Wasted; no abscess..	Removed by parents; cannot be traced
4 years	..	Abscess opened, stuffed with lint	..	Sinus weeping; limb abducted	Cannot be traced
15 mths.	..	Splint	..	Shortening 2½ inches	S C. Limb much wasted, and flexed. Walks with high boot, foot four inches from ground. Working as shopwoman
1 year 6 mths.	..	.. ..	2 years 3 mths.	.. ..	To Margate. Abscess apparently undergoing absorption
3 years	..	Forcible straightening under chloroform, 7 lbs. weight	..	Slightly flexed; walking with crutches	Reported much deformed (1879) and consumptive
1 year 7 mths.	..	Straightening under chloroform	1 year 3 mths.	.. ..	Pain much increased after straightening. Removed by mother. Reported 1876 getting about, but very lame. Cannot be traced
4 years 3 mths.	6 years	Weight, abscess opened	..	Good position; sinuses nearly healed	S. C. Several sound scars around both hips—both joints much flexed and somewhat adducted. Walks on toes, with great limp. Good health
2 years 10 mths	5 years	Right straightened under chloroform, weights	..	Good position ..	S. C. Walking for five years. Walks on toes with peculiar gait—fair movement right, less good in left, joint. Can sit easily; elbow sound; sound scar over left hip
..	..	Straightened under chloroform, weight	..	Good position ..	S. C. Sound scar inner side of thigh; 3½ inches short; walks on toe with much limp; limb wasted; health good
4 years 3 mths.	6 years 3 mths.	Straightened under chloroform	..	Limb straight; shortened; disease apparently cured	Cannot be traced
4 years	..	.. ..	..	Sinus healed; walking with crutches, but much deformed	Getting living; wounds discharging little; much crippled. Cannot be traced
18 mths.	..	Weight	14 mths.	Abscess still running	Removed by parents. S. C. Two sound scars; limb much wasted but straight; 2 inches short; stands well on limb, and walks well; good health
1 year 5 mths.	2 years 6 mths.	Abscess opened ..	..	Walking on crutches; abscess healed	Abscess followed measles. S. C. Walking for 8 years. Limb flexed; wears high boot, and support for genu valgum. Sound scar
..	..	Straightened under chloroform, weight	..	Wearing long splint on sound, and weight on bad, leg	Removed by parents. Heard of in summer of 1876, walking without crutches. Could not be traced subsequently
4 years 3 mths	4 years 9 mths.	Was straightened under chloroform	..	Walking on crutches. 'Cure'	In Cripples' Home
2 years	8 years	Straightened under chloroform; abscess opened	2 years	Straight; good health	Seen a year after discharge. Robust health; slight flexion of limb. Boy at one time had profuse suppuration, of several months' duration. Cannot be traced
2 years	..	Abscess aspirated and afterwards opened by incision	..	Abscess still discharging	Abscess discharging when last seen. Cannot be traced
3 years	4 years	Long splint and weight	..	Limb straight. Disease appeared quiet	Seen 4 years after discharge at Bournemouth. Limb slightly flexed, but sound. Elbow well
3 years 6 mths.	..	Abscess opened; splint on sound side, weight on bad side	..	Large abscess in right limb connected with spine	Taken out by mother, incurable. Cannot be traced

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1872								
38	9 M R	8	1 year	Great pain	.. .. ..	.. .. ..	.. .. ..	No
39	5½ F R	5¼	3 mths.	Flexed	Spontaneous ..	Groin	Albuminuria; enlarged liver	No
40	4 M	3½	6 mths.	Good position ..	Fall	Groin	.. .. ..	No
41	7 F R	5¾	1¼ year	Much flexed; pain ..	Fall	.. .. ..	Measles ..	No
42	6 M R	5¼	9 mths.	Flexed; pain; abscess	Fall . ..	.. .. ..	.. .. ..	No
43	4½ M R	3¾	9 mths.	Pain; abscess ..	Spontaneous ..	.. .. ..	Otorrhœa ..	No
44	3 F R	1¾	1¼	Flexed; pain ..	Fall	.. .. ..	Intercurrent measles.	No
45	4½ F L	4	6 mths.	Flexed	Spontaneous ..	.. .. ..	.. .. ..	No
46	11 M	8½	2½	Much flexion ..	Spontaneous ..	No abscess ..	.. .. ..	No
47	6 F L	5½	6 mths.	Flexed; abscess ..	.. .. ..	.. .. ..	.. .. ..	No
48	4–10 F L	..	..	Good position; pain on movement	.. .. ..	Abscess	Measles; abscess in neck	No
49	4 M R	3	1 year	Much flexed; pain; abscess; 3 sinuses	.. .. ..	Abscess	.. .. ..	No
50	10 F R	5	5	Flexed; no abscess	.. .. ..	.. .. ..	.. .. ..	No
51	6 F R	3	3	Flexed	.. .. ..	Abscess	.. .. ..	No
52	5 M	3	2	Able to walk ..	Sequela of scarlet fever	Abscess	.. .. ..	No
53	8 F R	2½	5½	Pain and abscess; first abscess 4 years before; a second 3 weeks before admission	.. .. ..	.. .. ..	Scarlet fever ..	No
54	9 F L	8–4	8 mths.	Abscess; flexed	.. .. ..	Front of thigh ..	.. .. ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
1 year 3 mths.	2 years 3 mths.	Weight; cautery ..	..	Walking with crutches	Relapse of pain in Christmas 1879–80. S. C. March 1880. Walks without much apparent limp; half-inch actual shortening; slight movement; stands well on the leg
2 years 2 mths.	..	.. ..	6 mths.	Wounds still discharging	Incurable; dropsy
About 3½ years	5 years 6 mths.	Abscess opened; weight	2 years 6 mths.	Wounds healed; wearing Thomas'	In hospital first occasion for 8 months; sent home apparently well. Readmission nearly 2 years later in much pain, and much distorted. Abscess soon formed, and discharged for 12 months. Under treatment, at intervals, till May 1877, when discharged wearing 'Thomas' Splint'; wounds healed. S. C. Several healed scars in front and behind joint. Limb flexed; 1¾ short; some movement; walking well
2 years	3 years 3 mths.	Straightened under chloroform, and weight	..	Walking well; good health	Seen 1876, apparently well. Cannot be traced
8 mths.	..	Weight; abscess opened	9 mths.	Wound nearly healed; good position; health good	Removed by parents; cannot be traced
..	..	Weight; abscess opened	..	Abscess healed ..	Removed by parents. Boy very sickly. Could not be traced
3 years	4½ years	Weight and splints	..	Health good, no pain; unable to stand	Night-screams were very persistent for some months. Slight relapse, 1875, which soon subsided, leaving her without pain, and in fair position. S. C. Much flexion. Walks on toes. 3½ apparent (1½ actual) shortening; limb well developed. Health good
2 years	..	.. ..	..	Good health and position	Removed by parents. Seen 4 years later. Had relapsed subsequently; was now walking, but very crooked. Cannot be traced
1 year	3 years 6 mths.	Splint on sound limb, weight on bad limb	..	Good position; good health	Seen 5 years later in business with father, apparently well. S. C. Can walk 10 miles. 2 inches apparent (1 inch actual) shortening. General health excellent
3 years 8 mths.	4½ years	Weight	..	Apparently cured ..	S. C. Much flexed. Walks well with high boot. Shortening, actual and apparent, 2½ inches. Scars sound
3 years	..	Weight; abscess opened	..	Walking on crutches; health good	Subsequently had a second abscess, from which she recovered, and a letter, March 1880, reported 'hip very nicely, and able to send her to school.' Seen July 1880, scar slightly weeping occasionally. Health good
7 mths.	..	Weight	..	? incurable; sinuses still open	Removed by parents. Seen 4 years later, working as a tailor. Looking delicate. Cannot be traced further
2 years 4 mths.	7 years 4 mths.	Long splint sound side, weight diseased side	..	Good position; walking sometimes with, sometimes without, crutches	Seen 6 months later, limb rather drawn up. To lie down a fortnight. Reported later, employed as kitchenmaid in a large establishment. Kneels for scrubbing; limp very slight. Cannot be traced
..	..	Straightened under chloroform; long splint used; abscess opened.	..	Abscess discharging; walking badly	Removed by parents. Cannot be traced
2 mths.	..	.. ..	..	Walking well	Report July 1880, relapse after leaving hospital. 2 abscesses formed. Limb now much shortened; walking with a crutch
..	..	Weight; interrupted splint; abscess opened	..	Sinus healed; ¾ inch short; walking on crutches	S. C. Walking since discharge (5 years); limb much flexed and wasted, 2½ inches shortening; slight movement in joint; considerable limp
1 year	1 year 8 mths.	Straightened under chloroform; abscess opened (aspirator)	..	Walking well; apparently cured	Seen five years after discharge. Walking with little limp; well. Cannot be traced

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1872								
55	4 M L	3–4	8 mths.	Flexed; painful ..	One other child with hip disease; fall	Groin	.. .. ..	..
56	4–10 M R	..	..	Much flexed; abscess	.. .. ..	.. .. ..	.. .. ..	No
57	12 F	10½	2 years 6 mths.	Good position; pain on walking	Spontaneous ..	Abscess	.. .. ..	No
58	6 F R	3	3 years	Distortion	Sequela of measles; phthisis in family	.. .. ..	Scrofulous abscess in neck	No
59	5 F R	4¾	3 mths.	Pain; bed-sores ..	Fall	Abscess? ..	Otorrhœa. ?brain symptoms	No
60	7 F	6	1 year	Pain; distortion ..	Fall	Abscess in thigh and iliac fossa	Measles ..	excised Reigate
61	7 F R	5¾	1 year 3 mths.	Flexed; pain ..	Fall	No abscess ..	Measles ..	No
62	8 M R	5	3 years	Much flexed. Abscess	Fall	Back of thigh and groin	Albuminuria ..	No
63	3 F R	1¾	1 year 3 mths.	Good position; pain; night-screams	Spontaneous ..	.. .. ..	Albuminuria ..	No
64	12 M R	3½	8 years 6 mths.	Much flexed; wasted. Abscess before admission	Sequela of measles	.. .. ..	.. .. ..	No
65	5 F L	4–10	2 mths.	Good position ..	Spontaneous ..	Abscess	.. .. ..	No
66	5 M L	3–7	1 year 5 mths.	Much twisted; much real shortening	Sequela of scarlet fever	No abscess ..	Diseased right elbow	No
1873								
67	6½ M	2½	4 years	Drawn up; occasional pain; 2 abscesses before admission, which had now healed	.. .. ..	.. .. ..	Chorea.. ..	No
68	8 M R	6	2 years	Flexed	.. .. ..	.. .. ..	.. .. ..	No
69	7¾ M L	5¾	2 years	Flexed; pain; abscess discharging	Spontaneous; phthisis	Inner side thigh	Measles; erysipelas	No
70	6 F	4	2 years	Abscess; good position	Fall	.. .. ..	.. .. ..	No
71	5 M R	2½	2½ years	Flexed	Fall; no phthisis ..	? Abscess ..	Measles; hooping-cough	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
3 mths.	..	Weight and long splint; abscess opened	10 mths.	.. ..	Discharged to Evelina Hospital with hooping-cough.
2 years	..	Limb straightened under chloroform; abscess opened; weight	..	Sinus discharging; not good position	To Margate. S. C. Several sound scars: limb flexed, ¾ inch short; very slight movement; walks well; able to stand and hop on the limb
1 year	3½ years	Weight and long splint on sound side	2½ years	Good position; disease quiet	Seen a year after discharge: abscess healed, good general health. Year later walking well without crutches. S. C. Sound scar outer side of limb; slight movement; walks well
1 year 3 mths.	..	.. ..	..	.. ..	To Margate, incurable. Heard of very lately. Walking with scarcely a limp, in good health, well-grown girl
6 mths.	..	Weight	..	Abscess, alleged absorbed	Taken home by parents. Reported by a friend four years later 'quite well'
1st time 4½ years, 2nd time (after interval of 9 mths.) 4 mths.	..	Abscess spontaneously opened	2 years	.. ..	Discharged November 1876, sinus healed, but reopened 8 months later. Readmitted August 1877, great discharge, relapse of pain. Discharged December 1877, wounds still open. Excised 1878 at Reigate. Seen 1879; good recovery, gaining own living
2 years	3¼ years	Straightened under chloroform		Walking well; apparently cured	Discharged 1874; seen 1876, still well. Walking 1877 without crutch; no pain, limp slight
16 mths.	5½ years	Abscess opened under chloroform; long splint	18 mths.	Good position; health good; one wound discharging	S. C. Walking for five years. Three sound scars below iliac crest, and a very large one over sacro-iliac joint; limb hardly at all wasted; slight limp; runs well
2 years 5 mths.	3 years 8 mths.	Long splint sound limb; cautery	..	Walking on crutches with Thomas' splint	Discharged 1875; fat and well; limb straight, walking; relapsed in January 1879; then readmitted in bad position and pain. Supplied with Thomas' splint, and sent to Convalescent Home. Able to walk about again in October 1879. S. C. Walks well, without much limp; still uses crutches out of doors. Limb flexed, about 1 inch short
1 year	..	Straightened under chloroform; long splint on sound, weight on bad, side	..	Abscess discharging; leg wasted	Seen 5 years after discharge, clerk railway station. Cannot be traced
9 mths.	..	Actual cautery; abscess opened	6 mths.	.. ..	Sent home with hooping-cough. Seen five years later; 'quite a cripple'
10 mths.	..	Splint on good side; weight on bad limb	..	Good position; joint quiet	Last heard of in 1876—walking about; cannot now be traced
8 mths.	5 years	Weight	..	Walking on crutches	S. C. Out of Hospital 6 years; 2 sound scars outer side of thigh; 2 inches real shortening; limb flexed and much wasted; walks well on toes. good deal of movement
1 year 4 mths.	..	Long splint on sound side; weight on diseased limb	..	Health good; improved position	Removed by parents. Letter, June 1880, from patient himself: 'Can walk without a crutch with a high-heeled boot 1½ inch deep; have had no pain for last 3 years.' Attends school
2 years 3 mths.	..	Long splint on good, weight on diseased, side	..	Abscesses discharging	Sent to Cheyne Home. Discharged incurable. When last seen, three years later, walking with Thomas'. Cannot be traced
1 year 9 mths.	..	Weight	1 year 8 mths.	Walking badly on crutches	Cannot be traced
3 years 5 mths.	6 years	Weight; long splint on good side	..	Walking, high boot; still flexed	Seen 2 years after discharge, 'walks very badly.' Cannot be traced

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1873								
72	8 M B	3	5 years	Much flexion ..	Spontaneous ..	Abscess (left side)	.. .. ..	No
73	6 F L	4	2 years	Flexed	Fall	.. .. ..	.. .. ..	No
74	4 M L	3	1 year	Position good. ..	Spontaneous ..	.. .. ..	Measles ..	No
75	7 M R	6½	6 mths.	Position good ..	Following rheumatism	No abscess ..	.. .. ..	No
76	6 F L	4–8	1½ year	Flexed, no abscess or pain	Fall	.. .. ..	.. .. ..	No
77	12 M	10½	1½ years	Flexion	.. .. ..	No	.. .. ..	No
78	3 F R	2–2	10 mths.	.. ..	Fall, phthisis on both sides	Abscess.. ..	.. .. ..	No
79	5 F B	2	3 years	Left flexed	Sequela of measles	No abscess ..	.. .. ..	No
1874								
80	4 F L	2¾	1¼ years	Flexed, abscess ..	Spontaneous ..	Abscess outside thigh and in back, burrowing	.. .. ..	No
81	6 M R	5½	6 mths.	Much flexed	.. .. ..	Abscess	.. .. ..	No
82	4½ F R	3	1 year	.. ..	.. .. ..	Abscess	Measles ..	..
83	5 F L	3	2 years	.. ..	Fall, phthisis in family	.. .. ..	.. .. ..	No
84	10 M R	7	3 years	Wasted, abscesses, two discharging	Spontaneous, phthisis	Abscesses ..	.. .. ..	No
85	4 M B (R first attacked, L 3 mths. later)	7	2 years	.. ..	Fall, mother died of phthisis	Abscesses ..	Disease of spine with abscess	No
86	3 F L	2	1 year	Night-screams ..	.. .. ..	Abscess	.. .. ..	No
87	7 F R	4	3 years	Flexed, abscesses ..	Fall	Abscess	? Phthisis ..	No

were examined by the Sub Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
1 year	..	Straightened under chloroform; weights; cautery; abscess opened under chloroform	..	2 discharging sinuses; good position; no pain	Returned to Ireland; 4 years later, walking with crutches
1 year 7 mths.	4 years	Weight; long splint sound side	..	Walking with crutches	Removed by parents. S. C. Walking five years; very much flexed and adducted, 3½ inch shortening; walks with very bad limp
1 year 10 mths.	..	Long splint sound side, weight on diseased limb	..	Some flexion; health good	To be treated at home. Cannot be found
1¼ year	1 year 9 mths.	Weight, long splint on sound limb	..	Walking without crutches; no limp	Reported to S. C. to be still quite well
2⅓ years	3 years 8 mths	Long splint sound side and weight	..	Good health; walking on crutches	S. C. walking 6 years; much flexion and shortening, limb well nourished, walks well but on toes
1 year	2½ years	Weight	..	Good position; walking with high boot	Reported to S. C. good cure; employed in grocer's shop
2 years 8 mths.	3½ years	Weight; long splint to sound side; abscess opened	1 year 8 mths.	Wounds healed; good position; crutches	Died 2 years later of Bright's disease, following measles. Had had no return, and walked well
1½ years	..	Long splint on right side, weight to left	..	Walking on crutches; general health good	R. limb attacked when 2 years old, left uncertain. Removed by parents to India. Cannot be traced
1 year	..	Weight, long splint to sound limb	9 mths.	Abscess discharging	Incurable. Still in Cheyne Home (1880)
9 mths.	..	Limb straightened under chloroform	7 mths.	Limb straight; health good	Removed by parents. Seen 4 years later, well, but walking very badly. Cannot be traced
2 years	..	Long splint sound side, weight bad side	5 years	Walking with crutches, apparently cured	Readmitted 2 years after discharge with small abscess in front of thigh, and went home in 3 weeks. Returned 6 weeks later, abscess aspirated. Discharged in 6 weeks. Admitted into Hospital for Sick Children, February 1880, with same abscess refilled, opened and healed in a week. Walking since first discharge (1876), at first with crutches, later without. S. C. Incision-scar outer side of thigh; 3½ inches apparent and real shortening, fair movement, walks with crutches, but can walk without them
9 mths.	2¾ years	.. ..	..	Good position ..	Seen a few months after discharge, able to walk well without crutches. Cannot be found (country case)
2½ years	..	Weight	1 year 8 mths.	Good position ..	Reported in 1878 as incurable. Cannot be traced
1¾ years	..	Abscesses opened ..	2 years	Good position; wounds discharging	Discharged 1875. Readmitted 1877, abscess near spine. Discharged in 2 months. Readmitted 1878; much better. Readmitted 4 months later for 6 months. Then to Convalescent Hospital; 6 months later returned walking with crutches, but dragging legs. Discharged in 2 days (June 1879). May 1880, much the same; sinus occasionally discharging
1 year 5 mths.	..	Abscess aspirated; weight	1 year 4 mths.	Child delicate; good position	No discharge after aspiration. Cannot be traced
10 mths.	..	Weight; splint sound limb	2 years	Wound discharging; ? phthisical	Removed by parents. Seen 3 years later, quite well, walks without crutch or high boot; limps a little

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1874								
88	F	..	2 years	Flexed	Spontaneous, phthisis	No	.. .. ..	No
89	M L	..	6 years	Flexed, two abscesses before admission	Fall, no phthisis	Abscess	.. .. ..	No
90	6 F L	5	7 mths.	Flexed, no pain ..	Fall	Abscess	.. .. ..	No
91	7 F R	5½	1½ year	Flexed, pain.. ..	.. .. ..	Inside of thigh..	.. .. ..	No
92	6 M L	5	8 mths.	Good position ..	Fall, scrofula in family	.. .. ..	.. .. ..	No
93	11 M R	10	1 year	Flexed	Fall, no phthisis	.. .. ..	.. .. ..	No
94	4–10 M L	3–10	1 year	Flexed	Fall	Abscess.. ..	.. .. ..	No
95	7½ M L	5½	2 years	Much flexed ..	Spontaneous ..	Abscess	.. .. ..	No
96	4 M L	3–8	4 mths.	Good position ..	Fall	Abscess; several sinuses	.. .. ..	No
97	7 M L	6½	9 mths.	Flexed; no abscess	Spontaneous ..	Abscess	.. .. ..	No
98	8 M R	6	2 years	Slightly flexed ..	Injury ..	No	.. .. ..	No
99	11 M R	..	..	Flexed	.. .. ..	Sinus in groin ..	.. .. ..	No
100	7 M R	5	2 years	Flexed	Sequela of measles	Abscess	.. .. ..	No
101	4 M	4½	2 weeks	.. ..	Fall	No	.. .. ..	No
102	6 M	5½	6 mths.	Abscess in groin; 1 inch short; eversion, extended	.. .. ..	Abscess ..	.. .. ..	No
103	3 F	2½	6 mths.	Good position ..	Sequela of measles	.. .. ..	.. .. ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
1 year 1 mth.	3 years	Weight; long splint sound side	..	Walking with crutches, health good; apparently cured	1879 had relapsed, but too old for re-admission. No further note
1¼ year	7¼ years	Weight; later interrupted splint; drainage tube inserted into old sinus	3 years	Walking on crutches	Sinuses closed in 7 months after admission. Seen 3 years later; walks very lame. Cannot be traced
1 year 10 mths.	2½ years	Weight; long splint; then interrupted on diseased side; abscess opened	9 mths.	Walking on crutches; good health; wound healed	Extract from letter, June 1880: 'Very little pain, in fact she is quite well; walks with a slight limp, and with one crutch'
1 year 11 mths.	3½ years	Weight; abscess opened	1¾ year	Wounds healed; child fat and rosy	Abscess discharged only two months. June 1880, runs alone, no pain, abscesses healed, wears high-heeled boot 3 inches
10 mths.	..	Weight; long splint sound side	..	Health good; dressed, wearing weight	Removed by parents. Cannot be traced
1½ years	2½ years	Weight; long splint sound side	..	Walking, high boot; health good	Cannot be traced. Walked badly when last seen
3¼ years	..	Straightened under chloroform; weight, long splint sound side; abscess opened	1¼ year	Walking with Thomas' splint; wounds healed	Discharged 1877. Readmitted 1878; sinus reopened; remained in hospital 2 months. Readmitted 3 months later with abscess. Discharged again 6 months after. 1879, walking with Thomas'. Cannot be traced
1⅙ year	..	Weight; splint sound side	..	.. ..	Hip had been 'put in' by bone-setter. Incurable; to Cheyne Walk; wounds discharging, boy pale, wasted. S. C. Numerous puckered red scars around hip. One sinus discharging over anterior iliac spine; limb wasted and short; walks with much limp; cloud of albumen. General health good, but boy still pale
4⅓ years	..	Weight; abscess opened; drainage	2⅓ years	Wounds (3) discharging; general health improved	Sent, walking in Thomas', to Convalescent Hospital; wounds closed while there in 1877. Returned April 1878, old wounds having reopened. Returned home August 1878, 3 open sinuses. S. C. Wearing Thomas'; several sound scars, one sinus open near iliac spine; firm ankylosis; shortening 1 inch; walks well; stands firmly on limb
1 year 5 mths.	..	Long splint on sound; weight on bad limb; cautery	1¾ year	Disease quiet; an abscess stationary (not opened)	Abscess burst later; seen 1878; flexed, pain; abscess in back
1 year 5 mths.	3½ years	Splint and weight ..	..	Walking well, crutches, apparently cured	S. C. Walking for last 3 years; firm ankylosis; 1½ apparent shortening; slight limp
1 year 2 mths.	..	Weight..	..	Abscess discharging; 'incurable'	1875. To Cheyne Home. Seen 1878, much better; May 1880, in bed with a relapse; case apparently hopeless
9 mths.	3 years	Weight; splint sound side	..	Slightly flexed; health good; apparently cured	Removed by parents. Seen October 1879; walking without crutches; has lately had an abscess; health good. S. C. Limb much flexed and wasted; 4 inches apparent and real shortening; walking for four years; two sound scars outer side of limb
2 mths.	6 mths.	weight; long splint..	..	.. ..	Treatment continued for about 6 months. Symptoms all subsided. Nothing more known
2 years	2½ years	splint; weight ..	..	Abscess healed; health good; foot everted; walking pretty well	S. C. Large scar outer side of thigh; walking for some years; ¾ inch shortening; slight wasting; fair movement; perceptible limp
3 mths.	..	.. ..	..	Good position; healthy	Died 4 years later

The letters S. C. *in the last column indicate that the cases*

No.	Age Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History / Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1874								
104	6 M	4½	1½ year	Good position; pain	Spontaneous; phthisis	Groin	.. .. ..	No
105	F	6	6 mths.	Flexed; large abscess	Spontaneous ..	Abscess	.. .. ..	No
106	4 F L	3	1 year	Pain	Phthisis in family; fall	.. .. ..	Disease of spine	No
107	5 M L	4	1 year	Pain; flexed ..	.. .. ..	Abscess	Varicella; measles	No
108	6 M L	5	1 year	Night screams; pain in knee	Fall	No	.. .. ..	No
109	7 F L	2	5 years	Flexed; abscess before admission	Sequela of scarlet fever	.. .. ..	Old spine disease	No
110	12 F L	10½	1½ year	Abscess	Fall	Abscess	Abscess in wrist	No
111	6 F R	4	2 years	Good position; no pain	Spontaneous ..	Abscess	.. .. ..	No
112	10 F L	6½	3½ years	Very much flexed ..	Fall; phthisis	.. .. ..	.. .. ..	No
113	3 F R	2½	6 mths	Flexed	.. .. ..	Abscess	.. .. ..	No
1875								
114	6 F R	5¼	9 mths.	Good position ..	Spontaneous; no phthisis	No	Scarlet fever ..	No
115	5 F L	5	5 weeks	Good position; child wasted	Fall; phthisis	No	.. .. ..	No
116	6 F	3	3 years	Abscess	Phthisis in father's and mother's family	Abscess	.. .. ..	No
117	6 M L	4–10	1 year 2 mths.	Abscess; bad position	Fall	Abscess	.. .. ..	No
118	6 F R	5	1 year	Good position ..	Sequela of measles; phthisis in mother's family	Abscess	.. .. ..	No
119	4 M R	3–10	2 mths.	Good position ..	Injury	No	.. .. ..	No
120	3 M B	R 2 L 2¼	R 1 year L 9 mths	Good position ..	Spontaneous	Abscess	Otorrhœa ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
2 years 10 mths	4½ years	Weight; abscess not opened	..	Wearing Thomas'; apparently cured	S. C. Walking since discharge 3 years ago. No crutches for 10 months; sound scars in front and outer side of joint; limb wasted; flexed; shortened an inch; walks firmly, but on toes
3 years 7 mths.	4½ years	.. ..	..	Wearing Thomas'; apparently cured	Well. At boarding school 1880. S. C. Extract from letter, June '80; seems quite cured of the disease, has left off Thomas' for more than a year, and crutches nearly two years
3 years	4 years	Long splint sound side, weight	..	Walking on crutches; good position; no abscess	Child in Children's Hospital, February 1880 (3 years after discharge). Limb drawn up, no abscess. Tenotomy, and limb brought down; left in good position, wearing Thomas' splint. S. C. Limb straight; rotated outwards; 2 inches real shortening; spinal disease repaired
2 years 5 mths.	4 years	Long splint sound limb; weight; abscess opened	1 year 8 mths.	Health fairly good ..	Discharged September 1876. Readmitted for a month February 1877. S. C. Walking since discharge, without crutches for 18 months; sound scars in front and outside of thigh; limb wasted, flexed; shortening 1 inch
5 mths.	1 year 7 mths.	Weight; splint sound side	..	Walking with crutches	Seen again 6 months after discharge; walking well, but limping
9 mths.	..	Weight; long splint sound limb	4 years	Good health; still flexed	Removed by parents. Discharge still in progress when seen six years later
3 mths.		Weight	..	Wounds healing ..	Removed by parents. Cannot be traced
1 year 10 mths.	3 years 10 mths.	Long splint; weight	..	Wearing Thomas'; in good position	Abscess noted as having been absorbed. S. C. Hollow now apparent at former seat of abscess; limb nearly straight; no visible limp
2½ years	6 years	Long splint and weight abducted with side weights	..	High boot; walking with crutches	Limb much shortened; well in health, but position not good; walking, though considerable limp
9 mths.	..	Interrupted splint diseased side; abscess opened	7 mths.	Abscess discharging	Discharged as incurable; seen 1878 (3 years after discharge), much better, walking fairly well. Cannot be traced
5 mths.	..	Weight; blisters ..	..	Good position; no pain	To be treated at home. Cannot be traced
1 year 5 mths.	1½ year	Long splint; weight	..	Apparently cured; slight limp	Cannot be traced
1 year 5 mths.	..	Abscess opened; splint; weight	2 years 8 mths	Wound healed; good position	Seen December 1877 (18 months after discharge), walking with crutches; abscess healed; pain on walking or standing. Cannot be traced
1 year 10 mths.	3 years	Long splint	8 mths.	Walking on crutches; wound healed; high boot	Cannot be found
6 mths. Readmitted 1¾ year	..	Weight; abscess opened	..	Good position; to be allowed to walk	Discharged 1875. No pain; good position. Readmitted 1878, abscess; this was opened. Discharged 1879; wound nearly healed; walking with Thomas'. S. C. Sound scar outer side of hip; ½ inch short; still walking with Thomas'
1½ year	..	Weight	..	Disease quiet; good position	Removed by parents. Cannot be found
1 year 8 mths.	..	Weight	2½ years	Good position; wearing Thomas'	

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1875								
121	5 M R	3	2 years	Flexed	Spontaneous	No	Hæmaturia ..	No
122	9 M L	5	4 years	Flexed	Spontaneous; mother phthisis	No	.. .. ..	No
123	5 F L	4	10 mths.	Flexed	Fall; father phthisis	No	.. .. ..	No
124	6 F R	5½	6 mths.	Good position ..	Fall; mother phthisis	Abscess	.. .. ..	No
125	11 M R	7	5 years	Good position ..	Fall	No	.. .. ..	No
126	7 F L	2½	4½ years	Good position; pain on movement	Fall; phthisis in family	Abscess	.. .. ..	No
127	6 F R	5–10	2 mths.	Abscess; wasted ..	Spontaneous	Abscess	.. .. ..	No
128	4 F L	4	5 weeks	Flexed; abscess recently burst	Spontaneous	Abscess	.. .. ..	No
129	3 M L	..	..	Slightly flexed ..	Spontaneous	No	.. .. ..	No
130	3 F L	..	..	Abscess; good position	Fall	Abscess	.. .. ..	No
131	4 F L	2	2 years	Flexed	Fall	Abscess in groin	Otorrhœa ..	No
132	5 M R	1½	3 years 8 mths.	Pain on movement	Fall	Abscess	Otorrhœa ..	No
133	8 M R	5	3 years	Flexed; abscess ..	Fall	Abscess	Otorrhœa ..	No
134	5 M B	4¼	9 mths.	Abscess; wasted ..	Fall; mother had hip disease	Abscess	.. .. ..	No
135	4 F R	3–10	2 mths.	Much flexed; great pain on movement	Fall	Abscess in groin	.. .. ..	..
136	8 M L	8	6 weeks	Good position ..	Spontaneous ..	No	.. .. ..	No
137	6 M R	5½	8 mths.	Flexed	Fall	Abscess	Spine disease ..	No
138	6 M R	4	2 years	Good position ..	Spontaneous ..	No	Spine disease ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
1 year 8 mths.	..	Long splint; weight	..	Improved	Extract from letter June 5, 1880: 'Capable of walking 5 miles at a stretch, and never complains of his leg, and seems cured to all intents and purposes'
1 year 10 mths.	6 years	Weight; splint ..	..	Slightly flexed; adducted; shortened	S. C. Walking 4 years; limb flexed, somewhat wasted; 2 inch shortening; walks well, and stands firmly on diseased leg
1 year 9 mths.	..	Weight; splint ..	..	Disease quiet	Discharged Nov. 1876; readmitted June 1877, flexed, abducted. Discharged again March 1879; walking with Thomas'. Readmitted third time Oct. same year; discharged Dec., walking
1 year 11 mths.	..	Long splint; limb abducted	..	General health good; limb still tending to draw up; apparent cure; walking	Abscess said to have been absorbed. Cannot be traced
6 mths.	..	Weight; splint ..	..	Good position; no abscess or pain	Removed by parents.
3 years 2 mths.	7 years 8 mths.	Weight; splint; abscess aspirated several times	..	Walking well; Thomas' splint	Readmitted June 1877, 3 months after discharge; flexed and abducted; discharged Oct. 1877, wearing Thomas'; in good position; walking well. S. C. Limb very much flexed; abducted; 1 inch shortening; considerable limp
1 year	..	Long splint; weight	..	Walking on crutches; health good	Feb. 1879, walking well, but abscess forming. Cannot be traced
3 mths.	4½ mths.	Weight	Under a month	Walking well: good general health	Discharged June 1875. Seen 1878, 'very good cure' reported; 'no limp'; abscess healed
5 mths.	..	Weight; splint ..	..	'Nearly cured; good position'	Had never walked properly. 1877, 2 years later, at school, keeping well
1 mth.	..	Weight; splint ..	..	.. ..	Never walked. Treated at home. Discharged May 1875. S. C. Depression on outer part of thigh as if from former abscess; no cicatrix in skin; no shortening; walking well without splint for 12 months
1 year 5 mths.	..	Weight	..	Walking well; good position	Abscess noted 'absorbed.' Reported 'delicate, walking badly.' Cannot be traced
2 years 8 mths.	6½ years	Weight	..	Walking with Thomas'; cured; abscess nearly healed	S. C. Angular curvature of spine; sound scars on outer side of joint, and 1 below spine of pubes; ½ inch short; some movement; walking well
9 mths.	..	Weight; long splint; abscess opened	2 years 6 mths.	Walking with crutches	Discharged June 1876. Seen 2 months later, 'satisfactory.' Cannot be traced
3 years 3 mths.	..	Weight; abscess opened	..	Double disease; incurable	Right limb found affected while in hospital. Discharged incurable May 1880. At Incurable Home; bad report
2 years 4 mths.	..	Weight, splint; abscess opened	3 mths.	Wearing Thomas'; walking; health good	Cannot be traced
6 mths.	8 mths.	Weight; long splint	..	Walking well.. ..	Discharged 1875. S. C. Walking well; movement perfect, good rotation; ½ inch shortening; stands, but cannot hop on affected limb
3 years 4 mths.	4 years	Weight; abscess opened	..	Walking without crutches	To Sudbury. S. C. Disease of spine healed; limb much wasted; large number of sound scars, 1 on outer side of hip 3 inches long; shortening ¾ inch, with external rotation; movements of joint, including abduction and adduction, very free; walks very well, hardly any limp
1 mth.	..	.. ..	..	As on admission ..	Treated at home. S. C. Walking wel for past 5 years; cannot run; lim wasted and adducted, joint almos quite fixed

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1875								
139	7 M L	6¾	4 mths.	Flexed	Spontaneous; F. phth.	Abscess	.. .. ..	No
140	7 F L	4	3 years	Good position ..	Fall; phthisis in family	Abscess	.. .. ..	No
141	5 M R	4¾	4 mths.	Flexed	Fall; F. d. of phth.	No	Scarlet-fever ..	No
142	4 M L	3¾	3 mths.	Good position ..	Spontaneous ..	No	.. .. ..	No
143	7 M R	6¾	4 mths.	Much flexed ..	Injury	Abscess	.. .. ..	No
144	3 F L	2½	6 mths.	Good position ..	Fall	No	.. .. ..	No
145	8 F L	6¼	1¾ year	Flexed; abscess discharging	Spontaneous ..	Abscess	.. .. ..	No
146	7 M R	5½	1½ year	Flexed; abscess ..	Fall	Abscess	.. .. ..	No
147	7 M L	6½	8 mths.	Flexed; abscess very large	Spontaneous ..	.. .. ..	.. .. ..	No
148	5–11 F B	4–11	R 1 year L 5 mths.	Much flexed; abscess	Spontaneous ..	Abscess	.. .. ..	No
149	3 M R	2	1 year	Night screams ..	Spontaneous ..	No	.. .. ..	No
150	9¾ F R	5¾	4 years	Flexion	Fall	No	.. .. ..	No
151	3 M L	1½	1½ year	Much flexed; pain on movement	Fall	Abscess	.. .. ..	No
152	5 M L	3	2 years	Abscess discharging in 3 places.	Fall	.. .. ..	Chronic dysenteric diarrhœa	No
153	10 M L	9–5	7 mths.	Flexed; much pain	? Fall No phthisis	Abscess outer side thigh	.. .. ..	No
154	11 M L	6	5 years	Flexed; abscess almost healed (broke 6 weeks before admission)	Sequela of hooping-cough; phthisis in family	Abscess	.. .. ..	No
155	9 M L	8	1 year	Good position ..	Fall	Abscess front of thigh	Albuminuria ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
3 years	4 years	Weight; abscess opened	2 years	Wearing Thomas'; walking well	Walking well when last seen, June 1880. Cannot be traced
1 year	..	Weight	3 years 2 mths.	Health good; position good; small sinus	Discharged 1876. Seen in 1878, very lame, but no pain. Cannot be traced
9 mths.	..	Long splint; weight	..	.. ..	Caught scarlet-fever. Parents declined return. Disease still in progress when heard of, Sept. 1879
1 year 2 mths.	1½ year	Weight	..	Walking with crutches; apparently cured	Discharged 1876. Seen in Feb. 1878, walking without crutches; hardly limping; no high boot. Cannot be found
2 years 3 mths.	..	Long splint, weight; abscess opened	..	Wounds discharging; Thomas' splint	Discharged 1877. Seen Aug. 1878, no pain, but limping; position not good; not using crutches. Cannot be traced
6 mths.	..	Weight, long splint; blisters	..	Going on well ..	Removed by parents. Cannot be traced
3 mths.	..	Weight, long splint	9 mths.	Position improved; abscess still discharging	Removed by parents. Cannot be traced
1 year 5 mths.	3½ years	Weight; abscess aspirated.	..	Walking well with crutches	Discharged Jan. 1877. Readmitted for Thomas', April 1877. Discharged same Oct., in good position, apparently cured; walking well. Seen April 1878, well. To give up Thomas'. Extract from letter, June 1880: 'Quite well, but still lame; goes to school'
9 mths.	..	.. ..	..	Abscess discharging	Discharged for scarlet-fever. Seen 1879; walking without crutches or high boot; hip stiff; attending school
3 years 7 mths.	5 years	Weights; abscesses aspirated	11 mths.	Discharged walking with crutches. Health good.	Discharged May 1879. Readmitted September 1879. Large abscess bottom of spine; very pale. Sickly. Abscess opened. Abscess healed in 4 months. Child discharged again February 1880; walking. S. C. Large number of sound scars around right hip, and one over left trochanter; both joints fixed; walking well on toes, limbs straight
1 year	2 years	Weight, long splint sound limb	..	Beginning to walk. Good position	
9 mths.	..	Weight, long splint	..	Walking with crutches	Discharged 1876. Seen in September 1879, much shortening; very lame. Subsequently died after an illness of 10 days, cause unknown
1½ year	3 years	Interrupted splint on affected limb; abscess opened	..	Disease quiet; abscess healed	To be treated at home. Abscess healed in 5 months after opening. Cannot be found
1 year 10 mths.	4 years	Weight	1 year	Good position; walking with Thomas' and crutches	S. C. Walking for 2 years. A number of sound scars on outer and inner side of thigh; real shortening ¾ inch; very free movement in flexion and extension; walks with decided limp; runs and can hop on diseased limb
4 mths.	..	Weight, splint; abscess opened	..	Abscess discharging	To country, discharged as incurable. Cannot be found
9 mths.	5¾ years	Weight, long splint	..	Walking well; apparently cured	Reader at printer's office. Reported July 1880 walking with slight limp. Plays cricket; walks to and from business, 4 miles a day
3 years 10 mths.	..	Weight; abscess aspirated	..	Walking with crutches; wounds discharging.	July 1880, reported still or crutches; wounds still open; very delicate

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1875								
156	3 F L	1½	1½ year	Flexed; abscess ..	Fall; mother died of phthisis	Abscess front of thigh	.. .. ..	No
157	4 M L	1	3 years	Flexed; much wasted	Spontaneous; father phthisical	.. .. ..	Strumous ophthalmia	No
158	3 M R	2	1 year	Good position ..	Fall; mother died of phthisis	Abscess	.. .. ..	No
159	4¾ M L	3–11	10 mths.	Flexed	Fall; mother phthisical	No	.. .. ..	No
1876								
160	11 F R	10	1 year	Much flexed; abscess	'A chill' ..	.. .. ..	.. .. ..	No
161	3 F B	2½	8 mths.	Much flexed ..	Fall	Abscess in both limbs	Otorrhœa ..	No
162	11 F R	9½	1½ year	Good position ..	Spontaneous ..	No	.. .. ..	No
163	6 M L	4½	1½ year	Much flexed ..	Spontaneous; father phthisical	Abscess	Scarlet-fever; croup	No
164	6 F R	5–1	11 mths.	Much flexed ..	Fall; phthisis	Abscess	.. .. ..	No
165	5 M L	3½	1½ year	Flexed; abscess ..	Fall	Abscess	Albuminuria ..	No
166	3 M R	1¾	1¼ year	Flexed	Fall; phthisis	No	Scarlet-fever ..	No
167	4 F R	3½	9 mths.	Pain; good position	Fall; phthisis both parents	Abscess	.. .. ..	No
168	8 M L	7	1 year	Flexed; wasted ..	Fall	No	.. .. ..	No
169	3 M R	2½	6 mths.	Flexed; pain ..	Fall	Abscess	Scarlet fever ..	No
170	6 M L	5 yrs. 7mths.	5 mths.	Good position ..	Spontaneous ..	Abscess	Former disease of ankle joint	Excision
171	5 F R	..	..	Abscess; good position	.. .. ..	Abscess	.. .. ..	No
172	5 M R	3	2 years	No abscess or pain	Kick	No	.. .. ..	No
173	8 M L	6¾	1¼ year	Good position ..	Spontaneous ..	No	Otorrhœa ..	No
174	7 M L	4	3 years	Much flexion ..	Fall	No	.. .. ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
2 years	..	Weight, splint ..	1¼ year	Looking well; wearing Thomas'; unable to walk	Cannot be found. When last heard of well, but limping.
3 mths.	..	Long splint, weight	..	Still very flexed ..	Removed by parents. Cannot be traced
2 years	3 years	Weight; abscess aspirated	..	Walking with Thomas' splint; apparently cured	S. C. Walking well for 18 months; sound scars outer side of hip; limb flexed and slightly adducted; 2 inches apparent and real shortening; external rotation; limited movement
1 year 11 mths.	2¾ years	Weight, long splint	..	Walking with Thomas'; apparently cured	Country patient. Cannot be found
1 mth.	..	Weight, splint sound side	10 mths.	? Phthisis	Discharged as incurable; wounds discharging profusely. Cannot be found
3½ years	4 years	Weight both limbs; abscess opened	1½ year	Walking with crutches	Abscesses were healed on discharge. Cannot be found
5 mths.	2 years	Weight	..	Apparently cured; walking without crutches	Cannot be found
1¾ year	3¼ years	Weight; abscess opened; long splint sound side	1⅔ year	Walking with Thomas' splint; wounds healed; health good; apparently cured	S. C. Walking for 3 years. 2 sound scars, one in front, one outside joint; ¼ inch shortening; hip nearly fixed; very trifling wasting; very slight limp
3½ years	4½ years	Abscess aspirated; long splint	1 year	Fat and well; wounds healed; walking with Thomas'	Seen about end of 1879; well.
1½ year	..	Abscess opened; splint sound side, weight on diseased side	1¼ year	Several discharging sinuses. Enlarged liver	Incurable. Cannot be traced
1½ year	..	Weight, long splint	..	Wearing Thomas' ..	Discharged September 1877. Readmitted April 1879; return of flexion. Discharged August 1879. Walking with Thomas' and crutches. S. C. Limb flexed; 1 inch shortening; trochanter drawn up; walks well, but on toes; movement limited
1⅓ year	..	Abscess opened ..	1 year	Very ill; high temperature	Removed by parents. Cannot be found
1¼ year	2 years	Weight, long splint	..	Wearing Thomas' splint; walking well	Cannot be found
1 year 10 mths.	2½ years	Splint, weight; abcess opened	9 mths.	Walking with Thomas', but badly; abscess healed	S. C. Walking 18 months; one scar outer side of hip; limb well nourished; ¼ inch short; some movement; walks with slight limp
1¼ year	..	Long splint, weight	7 mths.	Wound discharging	Excised (July 1879) just after discharge. Reported, September 1880, continued suppuration; phthisis; albuminuria
2⅓ year	..	Weight; abscess opened	..	Walking well with Thomas' and crutches; wound healed	S. C. Several sound scars outer side and front of thigh, limb quite sound; some movement; walking well
1½ year	3½ years	Weight, long splint	..	Walking with Thomas'	S. C. Walking two years; limb fairly developed; straight; ½ inch short; fair movement; walks and hops well on diseased limb
6 mths.	..	Long splint, weight	..	Discharged, very crooked	Cannot be traced
10 mths.	3 years 10 mths.	Splint, weight ..	..	Walking well with Thomas' splint	Reported, September 1880, walking without crutches; much limp

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1876								
175	4 M R	3½	6 mths.	No pain; slight limp	Fall	Abscess	Scarlet-fever ..	No
176	6½ F R	4½	2 years	Pain; fair position	Fall	Abscess	Scarlet-fever ..	No
177	10½ M R	10-2	4 mths.	Pain; good position	Fall	No	.. .. ..	No
178	5 M L	4¼	9 mths.	Pain; good position	? Fall	No	.. .. ..	No
179	7 M L	5	2 years	No pain; good position	? Fall	No	.. .. ..	No
180	6 F L	5½	6 mths.	Bad position; abscess discharging	Spontaneous ..	Abscess	.. .. ..	No
181	4 F L	3-11	1 mth.	Flexed; no pain ..	Spontaneous ..	No abscess ..	.. .. ..	No
182	3-7 M R	2-7	1 year	Good position; pain in knee	Spontaneous ..	No	.. .. ..	No
183	3 F R	2¼	9 mths.	Pain; abscess ..	Spontaneous ..	Abscess	.. .. ..	No
184	6 M R	4	2 years	In bad position; abscess	Spontaneous; phthisis	Abscess	.. .. ..	No
185	4 M L	..	..	Flexed, abducted and everted	.. .. ..	No	.. .. ..	No
186	5½ F L	3½	2 years	Acute pain; much flexion; abscess discharging	Spontaneous; phthisis	Abscess	.. .. ..	No
187	3½ M R	3	6 mths.	Bad position ..	Fall; mother died of phthisis	Abscess	.. .. ..	No
188	3-10 M L	2½	1½ year	Flexed; pain on movement	Fall	Abscess	.. .. ..	No
189	4½ M B	3¾	9 mths.	Good position; pain	Spontaneous ..	Abscess	.. .. ..	No
190	5 F L	4¼	9 mths.	Flexed; pale; wasted	Fall; no phthisis	No	Spinal disease; otorrhœa	No
191	7 M L	5½	1½ year	Good position; abscess	Spontaneous; father died of phthisis	Abscess	.. ..	

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
2 years 11 mths.	3½ years	Weight, long splint; abscess opened (aspirator)	1 year	Walking with Thomas' splint	
2½ years	4½ years	Weight; abscess opened	2½ years	Walking with Thomas'; wound healed;	S. C. Wound sound; some flexion; one inch short; joint fixed; walks well
1½ year	1½ year	.. ..	..	Walking well ..	S. C. Cured; movement perfect
1 year	1¾ year	Weight	..	Walking with Thomas' and crutches	
5 mths.	2 years 5 mths.	Weight	..	Walking without crutches	
8 mths.	..	Long splint, weight	..	Wound healed ..	To be treated at home
9 mths.	..	Weight, long splint	..	As on admission ..	Removed by parents. May 1880, report, still the same
2 mths.	1 year 2 mths.	Weight	..	Wearing Thomas' ..	Parents well off in country. S. C. Walking 3½ years; no limp, shortening, or wasting; very fair movement; limb straight
1 year 2 mths.	..	Weight; abscess opened	9 mths.	Abscess discharging	To be nursed at home. Cannot be found
1 year 2 mths.	3 years 2 mths.	Weight, long splint	..	Wearing Thomas'; walking well	S. C. Relapse September 1879, 2 years after discharge. Walking with crutches; a sound scar over great trochanter; hardly any limp; no evident shortening or wasting
6 mths.	..	Weight, long splint	..	Disease still existing	Discharged at parents' request. Afterwards under treatment by a bone-setter; abscess followed. Since gone to Australia
2 years	4 years	Weight, long splint	1 year 8 mths.	Walking with Thomas'; wound healed	S. C. Still wearing Thomas' (18 months after discharge). Sound scars over back and side of joint; very considerable movement; slight shortening
2 years 5 mths.	..	Weight, long splint	2 years 2 mths.	Walking with Thomas'	Discharged May 1878. Readmitted month later in great pain. Abscess opened. Discharged again March 1879. Walking with Thomas'. S. C. Still wearing Thomas'; one sound scar on outer side of hip; ½ inch short; very firm ankylosis; limb wasted
2 years 2 mths. 5 mths. 2nd admission	4½ years	Weight, long splint; abscess spontaneously opened	1½ year	Wounds healed; walking fairly well	Discharged, flexed, in 1878. Readmitted 1879 (June), still flexed. Discharged November 1879. S. C. Walking well (2 years after discharge); two sound scars on outer side of hip; limb abducted and slightly flexed some movement in joint
1½ year	..	Weight	..	Disease in progress ..	Country case. Cannot be traced
4 mths.	..	Weight	..	No abscess	To Incurable Home. July 1878, still the same. July 1880, still living, but condition not known
1½ year	2 years 10 mths.	Weight [illegible]	[illegible]	[illegible]	Discharged February 1878. Seen February 1880, wound sound; limb [illegible]; walking well. Cannot be [illegible]

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1876								
192	6 M R	3¼	2¾ years	Flexed: abscesses; child thin and pale	Fall	Abscess	.. .. ..	Excision
193	5½ F R	4–8	7 mths.	Flexion	Fall	No	.. .. ..	No
194	8 M R	7–5	7 mths.	Good position; large abscess	Spontaneous; father died of phthisis	Abscess	.. .. ..	No
195	7 M R	6	1 year	Much flexed	Fall	Abscess	.. .. ..	No
196	7 M L	5	2 years	Abscess	Spontaneous; phthisis in family	Abscess	.. .. ..	No
197	8¾ M R	2¼	1½ year	Flexed; abscess	Spontaneous; no phthisis	Abscess	.. .. ..	No
198	3 M L	1½	1½ year	Flexed; adducted, inverted	Spontaneous; phthisis in mother'sfamily	Abscess	.. .. ..	No
199	8¾ M R	6¾	2 years	Limb flexed ..	Spontaneous; phthisis in mother's family	Abscess	.. .. ..	Amputation
200	8 M R	7½	8 mths.	Abscesses; inversion	Spontaneous ..	Abscess	.. .. ..	Excision
201	4 M R	2½	1½ year	Slight flexion; old sinus slightly discharging	Sequela of fever	Abscess	.. .. ..	No
202	7 M R	6	1 year	.. ..	Fall	No	Otorrhœa	No
203	7 F R	5	2 years	Pain; good position	Spontaneous; father died of phthisis	Abscess	.. .. ..	No
204	4–10 M L	4–11	9 mths.	Flexed; pain ..	Fall	No	Ophthalmia	No
1877								
205	10–11 F L	10–10	1 mth.	Good position ..	Spontaneous ..	No	.. .. ..	No
206	10 M R	..	..	Flexed; old sinus ..	.. .. ..	.. .. ..	.. .. ..	No
207	9 F R	8¼	9 mths.	Inversion	Injury	No	.. .. ..	No
208	7½ M L	6	1½ years	Very much flexed ..	Fall	Abscess	. .. ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
4 mths.	..	Weight	..	.. ..	To Hammersmith; excised
1 year 10 mths.	2 years 5 mths.	Weight	..	Walking very little with Thomas'	Seen June 1879. Wearing Thomas' still, but well enough to leave it off. Country case. Cannot be traced
2½ years	..	Abscess opened; weight; splint	..	Abscess discharging; walking with Thomas'	To Convalescent Home. General health feeble; many wounds still open. May 1880, lately much improved
2 years 8 mths.	..	Weight, splint; abscess opened	16 mths.	Wounds discharging; general health very bad	To Incurable Home. November 1879 (4 months later), no better
2 years	4 years	Weight, long splint; abscess opened	..	Wearing Thomas'; ? wounds healed	S. C. Several cicatrices outer and back part of thigh, and close to fold of groin; much wasting of limb; 1½ inch shortening; trochanter drawn up 1½ inch; still wearing Thomas'; limb straight
2½ years	..	Weight	..	Wearing Thomas' ..	Seen December 1879, walking pretty well on crutches. Cannot be found
2 years 10 mths.	4½ years	Aspiration of abscess; splint, weight	2 years	Walking with Thomas'; wounds healed	Sound scar; position good; lately in because limb was flexed. May 1880, health sound; walking with Thomas'
10 mths.	..	Long splint, weight; abscess opened	..	Walking well with Thomas'; apparently cured	Discharged October 1877, walking well with Thomas'; relapse November 1877, several abscesses formed, and were opened. Convalescent Home, 1878. January 1879, amputated at hip-joint. S. C. Sinuses slightly discharging; faint cloud of albumen in urine; health good
5 mths.	..	Weight	..	Transferred to Hospital for Sick Children for excision	Excision at Children's Hospital. Then to Convalescent Home. July 1878. wounds not healed. Cannot be traced
1½ year	3 years	Long splint, weight	..	Walking with Thomas'	Sinuses reopened after admission. June 1879, seen, walking with Thomas'. Sinuses healed. Cannot be found
1½ year	..	Weight	..	Walking well ..	Admitted January 1874. Discharged April 1875. Relapse July 1877; pain and distortion. Discharged again wearing Thomas'. June 1880, on crutches; some discharge
11 mths.	2 years 11 mths.	Weight, long splint	..	Walking well; Thomas' splint	Extract from letter, June 1880: 'No return of pain; leg stronger'
1½ year	..	.. ..	..	No entry	Heard of 18 months after discharge; health bad. Phthisis (?); limb very feeble; not walking
4 mths.	5 mths.	Long splint, weight	..	Cured; walking well	Cannot be found
1 year 10 mths.	..	Long splint, weight	..	Walking with Thomas'; sinus weeping	Country case. Reported May 1880, sinuses healed; boy at school; decided limp
2 mths.	11 mths.	Weight, long splint	..	Walking well ..	S. C. Movement of the joint perfect; walks without the slightest visible limp; diseased limb ½ inch less in girth of calf than its fellow
2 years	..	Abscess opened; long splint, weight	1 year 8 mths.	Walking with Thomas' splint	Discharged April 1879. Readmitted December 1879, sinus reopened and discharging a little. Discharged again June 1880. Walking with crutches. July 1880, sinuses healed

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1877								
209	11 M R	10½	8 mths.	Good position ..	Injury; phthisis in mother's family	Abscess	.. .. ..	No
210	7 F B	..	..	Flexed (both) ..	.. .. ..	No	Ophthalmia ..	No
211	6 M L	5–8	4 mths.	Flexed; abducted ..	Sequence of scarlet-fever	No	.. .. ..	No
212	8 M L	8	6 weeks	Flexed	Spontaneous ..	Abscess	Albuminuria ..	No
213	6 M R	5	1 year	Limb much flexed ..	Spontaneous; phthisis in family	Abscess	.. .. ..	No
214	6½ F R	5–11	4 mths.	Good position ..	Spontaneous ..	No	.. .. ..	No
215	11 M R	10	1 year	Flexed	Spontaneous ..	No	.. .. ..	No
216	9 F L	7	2 years	Much flexed ..	Spontaneous; no phthisis	.. .. ..	.. .. ..	No
217	9½ M L	5½	4 years	Flexed	Sequela of measles	No	.. .. ..	No
218	4 M R	2 mo.	3 years 10 mths.	Flexed	Spontaneous ..	Abscess	.. .. ..	No
219	11 F R	10¾	3 mths.	Good position ..	Spontaneous; phthisis in family	.. .. ..	.. .. ..	No
220	4½ F R	4–2	4 mths.	Much flexed ..	Spontaneous ..	.. .. ..	Ophthalmia; hooping-cough	No
221	8 M L	5	3 years	Much flexed ..	Fall	No	.. .. ..	No
222	4½ M R	4–1	5 mths.	Flexed; everted ..	Phthisis in family	.. .. ..	Ophthalmia	No
223	8 M L	7	1 year	Flexed	Spontaneous; no phthisis in family	No	.. .. ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
1 year 8 mths.	2 years 3 mths.	Abscess aspirated ..	9 mths.	Wound healed; walking with Thomas'	Abscess formed 9 months after onset of disease; aspirated 3 times, subsequently burst and discharged for 7 months, then healed. May 1880, reported at work, well
1 year 8 mths.	..	Weights	..	Position good; commencing to walk	Walking with crutches. Extract from letter June 1880: 'Now at Convalescent Home; has not much power in knee-joints, but can walk without crutches, dragging one foot after the other
1½ year	1 year 8 mths.	Weight, splint ..	..	Walking, but not well	Position bad; health very good. Report from letter, June 1880, 'Walks 3 miles every day to school, and has done so for last 12 months; walks a little lame'
1 year 7 mths.	..	Abscess opened ..	4 mths.	Wearing Thomas' but not walking; sinus healed	Abscess opened, and remained discharging probably about 9 months. Extract from note June 1, 1880, 'Too ill to come, suffering from epistaxis and rheumatism'
2 years 5 mths.	..	Weight, splint ..	1 year 5 mths.	Walking in Thomas'; good position and health	Abscess broke 5 months after forming. Discharged for 9 months; healed, but reopened 6 months later—after walking in Thomas'. Discharged 3 months. S. C. Still wearing Thomas'. Sound scar front of joint; limb quite straight; shortening 1 inch; very fair movement
4 mths.	..	Weight	..	Wearing Thomas' ..	Discharged at parents' request. June 1879, reported walking very lame. Cannot be found
1st 4 mths. 2nd 9 mths.	2½ years	Weight	..	Walking with Thomas'; well, but not quite good position	Discharged Sept. 1877; readmitted March 1878; discharged again Jan. 1879. At Portsmouth. May 1880, reported walking with hardly a limp
11 mths.	2 years 11 mths.	Weight	..	Walking well with Thomas'	Has never complained of pain since discharge. Has left off splint 15 months, and crutches 6 months. Walks tolerably well, but a little lame
5 mths.	..	Weight, long splint	..	Walking well with Thomas'	S. C. Using crutches since discharge in winter 1877; walks well and easily without them; limb slightly abducted and wasted, ½ inch shortening; joint almost fixed
2 years 8 mths.	6½ years	Weight; abscess opened	..	Walking in good position with Thomas'. Abscess healed.	May 1880, in country, in good health
4 mths.	7 mths.	Weight, long splint	..	Walking with Thomas'	S. C. Walks without any limp; limb well grown; abducted; ⅜ inch apparent lengthening
10 mths	..	Long splint, weight	..	.. ..	Discharged with hooping-cough. Oct. 1879, walking very lame; poor health; very scrofulous family
5 mths	3½ years	Weight, splint ..	..	Walking with Thomas' splint	S. C. Walking for 2 years; able to run well; limb slightly flexed, and shortened; joint almost fixed
2 years 5 mths.	..	Weight, splint ..	..	Thomas' splint; walking	
4 mths.	..	Weight, long splint	..	Wearing Thomas' ..	Discharged at parents' request. Country case. Cannot be found

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1877								
224	5 M R	3	2 years	Good position ..	Spontaneous ..	No..	.. .. ..	No
225	6 F L	4–2	1 year 10 mths.	Abscess; good position	Fall	Abscess	.. .. ..	No
226	6 F L	5	1 year	Flexed; abscess ..	Spontaneous; no phthisis	.. .. ..	.. .. ..	No
227	8½ M L	3½	? 5 years	Much flexed and adducted	Fall; no phthisis	Abscess	.. .. ..	No
228	6–2 F L	1–2	5 years	Much flexed; wasted	.. .. ..	No	.. .. ..	No
229	7½ F L	7	9 mths.	Flexed; adducted ..	Fall	Abscess	.. .. ..	No
230	6 F R	5	1 year	Flexed; abducted ..	Spontaneous ..	Abscess	.. .. ..	No
231	4 F R	3¼	9 mths.	Position good ..	Spontaneous ..	No	.. .. ..	No
232	6 F L	4	2 years	Flexed	Spontaneous ..	No	.. .. ..	No
233	4 M	3	1 year	Good position; abscess	Fall; no phthisis	Abscess	.. .. ..	No
234	6 F L	5	1 year	Flexed; adducted; large abscess	Spontaneous ..	Abscess	.. .. ..	No
235	3½ F R	10 mths.	2½ years	Good position, abscess	Fall	.. .. ..	.. .. ..	No
236	8 M L	5	3 years	Much flexed and adducted, old scars of abscesses, pain on movement	Fall, mother phthisical	.. .. ..	.. .. ..	No
237	3–11 F L	2–5	1½ year	Much flexed, abscess	Fall, no phthisis	Abscess	Albuminuria	No
238	9¾ F L	6¾	3 years	Old abscesses ..	Fall	Abscesses ..	.. .. ..	No
239	6 M L	5	1 year	Acute pain; much flexed	Injury	Abscess	.. .. ..	No
240	7–10 M L	5–10	2 years	Flexed, abducted, sinuses	Fall	Abscesses ..	.. .. ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
7 mths.	2 years 7 mths.	Weight	..	Wearing Thomas' ..	August 1878, walking without apparatus; well, with very little limp. Cannot be found
1 year 2 mths.	3 years	Abscess opened ..	..	Walking with crutches	Abscess discharged for 3½ months; then healed. S. C. One sound scar outer side of hip; perfect mobility of joint, including rotation
1 year 2 mths.	2 years 2 mths.	Abscess aspirated twice	8 mths.	Much adducted and somewhat flexed	Went to St. Bartholomew's Hospital for osteotomy for great adduction, but was there forcibly straightened after tenotomy. S. C. Walking for 6 months; limb fairly nourished; very much adducted; real and apparent shortening 3½ inches. Walks very badly.
1 year 7 mths.	..	Weight	..	Walking well with Thomas'	S. C. Still walking with Thomas' 12 months after discharge; sound scar on outer side of hip; actual shortening 2 inches; very fair movement
9 mths.	5 years 9 mths.	Weight	..	Walking with Thomas'	Health good; walking, but not well, March 1880, with crutches. Cannot now be found
1 year 7 mths.	..	Weight; abscess opened	1 year	Abscess discharging	To Incurable Home. Abscess discharging for 15 months before she left hospital. May 1880, still at the Home; condition unchanged
1 year 9 mths.	..	Abscess aspirated twice	..	Walking well with Thomas'	June 1880, reported still wearing splint; very well
10 mths.	..	Long splint, weight	..	Walking with Thomas'	May 1880, in the hospital. Double disease now; large abscess in left hip; disease of right limb quiet; delicate
1 year 5 mths.	3 years 5 mths.	Long splint, weight	..	Walking well with Thomas'	S. C. Still wearing Thomas', 12 months after discharge; limb well nourished; 1 inch short; slightly adducted
1 year 3 mths.	..	Weight; abscess aspirated, and afterwards broke	1 year	Wounds healed; walking with Thomas'; health good	Abscess open for 10 months. S. C. Sound scars; shortening half an inch, fair movement; able to stand on limb, and walks without any apparent limp
1 year 8 mths.	2 years 8 mths.	Splint, weight; abscess aspirated	..	Walking well with Thomas'	S. C. Limb considerably flexed; walks well, but with a limp. Skin on outer side of limb adherent to deep fascia in situation of former abscess
2 mths.	3½ years	Weight	..	Good position; abscess	Discharged with hooping-cough; treated at home. Seen May 1880, position good; apparently cured; walking on crutches
11 mths.	..	.. ..	..	Still bad position ..	Osteotomy at St. Bartholomew's Hospital; wound quickly healed, but position of limb not much improved
2 years	..	Abscess aspirated; weight	..	Incurable; profuse discharge	At Incurable Home, and no better, May 1880
1 year 5 mths.	4 years 5 mths	Weight	..	Wounds healed; walking well with crutches	S. C. Number of sound scars about hip; walks well with hardly any limp; joint almost completely fixed
2½ years	3½ years	Weight	..	Walking with Thomas', wounds healed	Abscess discharged for 16 months. S. C. Walking without splint for 2 months; puckered scars front and outer side of joint; limb well nourished; ½ inch shortening; very fair movement, slight limp
1 year 10 mths.	..	Long splint, weight	..	Walking with Thomas'; wounds apparently healed; cured	Supposed incurable on admission. S.C. Still wearing splint; large number of sound scars, chiefly outer side of joint; shortening ¾ inch; movement very limited

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1878								
241	7½ F	6½	11 mths.	Flexed, wasted ..	No phthisis ..	No	.. .. ..	No
242	9 M	4	5 years	Much flexed ..	Fall; father died of phthisis	No	.. .. ..	No
243	8 M L	5	3 years	Very much flexed and adducted	Fall; no phthisis	Abscess	.. .. ..	No
244	11 F R	10–5	7 mths.	Large abscess, limb much drawn up	Spontaneous ..	Sinus	.. .. ..	No
245	3½ F R	3–2	4 mths.	Abscess; fair position	Spontaneous; no phthisis	Abscess	Albuminuria after scarlet-fever	No
246	6 F R	5½	6 mths.	.. ..	Fall	Abscess	.. .. ..	No
247	10¾ M R	9–7	1 year 2 mths.	Pain, abscess discharging	Spontaneous ..	Abscess	Scarlet-fever ..	No
248	11 F R	9–10	1 year 2 mths.	Flexed, adducted, pale, and thin	Spontaneous ..	Abscess	.. .. ..	No
249	11–11 M R	11–9	2 mths.	Slightly flexed, acute pain	Spontaneous ..	No	.. .. ..	No
250	5 F L	3½	1½ years	Good position, but in pain	Sequela of scarlet fever	Abscess	.. .. ..	No
251	9 M L	8¾	3 mths.	Flexed, abducted	Spontaneous ..	Abscess	.. .. ..	Excision
252	5 F L	3	2 years	Flexed	Spontaneous; no phthisis	.. .. ..	.. .. ..	No
253	3¼ M	2–7	8 mths.	Very large abscess ..	No phthisis ..	Abscess	Scarlet-fever ..	No
254	9 M R	8–7	5 mths.	Flexed	Injury; phthisis in mother's family	.. .. ..	.. .. ..	No
255	F L	..	..	Much flexed, abducted, old abscess	.. .. ..	.. .. ..	Otorrhœa ..	No
256	9½ M	9	6 mths.	.. ..	Spontaneous; phthisis on mother's side	No	.. .. ..	No
257	4–10 M R	3½	1½ year	Very much flexed ..	Spontaneous; father phthisical	Abscess	Scarlet-fever ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
9 mths.	..	Weight	..	Walking, but not well	Discharged for ringworm. Cannot be traced
2 mths.	..	Weight	..	Discharged in same condition	To be treated at home—Ireland. Cannot be traced
5 mths.	..	Long splint sound side, weight	..	Walking, but very lame	Condition unchanged. May 1880, limb still flexed; abscess aspirated a few days since; health good
1½ year	..	Weight	..	Walking with Thomas'; abscess healed	Cannot be traced
..	..	Weight, long splint sound side	..	.. ..	March 1880, under treatment. March 1879, to Bournemouth, wearing a Thomas'; 5 months later returned with two sinuses; acquired scarlet-fever September 1879. Readmitted December 1879, albuminuria; wounds very offensive
2 years	..	Weight	..	Good position; abscess absorbing	S. C. Walking with crutches; fulness round joint, but no fluctuation; shortening 1½ inch; very little movement; position good
2 mths.	..	Weight	..	Abscess discharging	Discharged with scarlet-fever; afterwards treated at home; reported incurable May 1880
7 mths.	..	Weight	..	Walking well with Thomas'; apparently cured	Discharged October 1878. Readmitted April 1879, with large abscess, which was aspirated; little improvement. Left hospital in July 1879 as over age. May 1880, reported incurable
7 mths.	9 mths.	Weight	..	Walking well, Thomas' and crutches	Seven years ago same leg reported to have been affected; in bed for six months and got much better; well till present attack. July 1880, still on crutches.
1 year 5 mths.	..	Weight, long splint	1¾ year	.. ..	October 1879, to Convalescent Home. May 1880, reported abscess discharging; health bad
1st 9 mths. 2nd 9 mths.	..	Long splint, weight; tenotomy	1½ year	Much distorted; no active symptom. 2nd admission, discharged to Children's Hospital. Much pain; large abscess	February 1879, to St. Bartholomew's Hospital for osteotomy, abduction and flexion being still very marked, and ankylosis thought bony. In St. Bartholomew's Hospital acute pain supervened, so returned to Hospital for hip disease in March 1879; abscess followed with excessive pain. To Children's Hospital, December 1879. Excision, and subsequently amputation.
1 year 1 mth.	..	Weight	..	Wearing Thomas', but not walking	S. C. Walking fairly well; joint very stiff
1 year 1 mth.	..	Abscess opened ..	..	Walking with Thomas'	June 1880, reported well; abscess healed; walking very badly
1½ year	..	Weight, splint ..	..	Walking with Thomas'; good position	Cannot be traced
1½ year	..	Weight, long splint on sound side	..	Walking with Thomas'	S. C. Still wearing Thomas'; limb flexed and adducted; shortening 2½ inches; slight movement
6 mths.	..	Weight, long splint on sound side	..	Walking with Thomas'	Cannot be traced
..	..	Abscess opened ..	1¾ year	Wound discharging ..	To Westminster Hospital with scarlet-fever

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1878								
258	6 F L	4½	1½ year	Much flexed and adducted	Fall	.. .. ..	.. .. ..	No
259	9 F L	8	1 year	Much flexed; great pain	Injury; no phthisis	No	.. .. ..	No
260	3½ F L	1½	2 years	Much flexed; large abscess	Spontaneous	Abscess	.. .. ..	No
261	4 M L	..	..	.. ..	Fall; phthisis on father's side	No	Disease of spine	No
262	5½ F R	4½	1 year	Much flexed; no pain	Spontaneous; no phthisis	Abscess	.. .. ..	No
263	3½ F L	3–2	4 mths.	Much flexed; pain on movement	?Fall; no phthisis	No	.. .. ..	No
264	7 F R	6	1 year	Pain; abscess ..	Fall; phthisis, mother's family	Abscess	.. .. ..	No
265	4 M R	2	2 years	Pain; much flexed	Sequela of measles; no phthisis	No	Ophthalmia	No
266	5 F R	3	2 years	Much flexed and adducted	Spontaneous ..	No	.. .. ..	..
267	5 M R	3	2 years	Night-screams; pain; good position	Fall; mother's family, phthisis	Abscess	.. .. ..	No
268	7 M R	4	3 years	Pain; abscess discharging	Spontaneous; phthisis in mother's family	Abscess	.. .. ..	Excision
269	6–10 F R	6½	4 mths.	Flexion	Injury	No	.. .. ..	No
270	8 F R	7	1 year	Flexed; abducted ..	Spontaneous .	.. .. ..	.. .. ..	Excision
271	8 F R	7¼	9 mths.	Much flexed; pain	Spontaneous ..	No	.. .. ..	No
1879								
272	F R	..	1½ year	Good position; cold abscess, already aspirated	Injury; phthisis	Abscess	.. .. ..	No
273	4 F R	4	6 weeks	Good position; no pain	Spontaneous ..	No	.. .. ..	No
274	5 M L	3	2 years	Much distorted ..	Spontaneous; father's family phthisis	No	.. .. ..	No
275	7 M R	6	1 year	Flexed; no pain ..	Spontaneous ..	No	.. .. ..	No
276	4 F L	3–8	4 mths.	Flexed; pale and thin	Fall; mother died of phthisis	No	.. .. ..	No
277	6½ F R	5¾	9 mths	Good position ..	Spontaneous ..	No	.. .. ..	No
278	8–10 F	4	4 or 5 years	Large abscess ..	Spontaneous; no phthisis	Abscess	.. .. ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
1 year 4 mths.	..	.. ..	..	Walking with Thomas'	S. C. Still wearing Thomas'; limb in good position; one inch shortening
18 mths.	2½ years	Weight	..	Walking, Thomas' and crutches	S. C. Wearing Thomas' for eight months; walks well; firm ankylosis; much twisted
4 mths.	..	Weight, abscess opened	..	Wearing Thomas' ..	June 1880, lately readmitted with a second abscess
1 year 5 mths.	..	.. ..	..	Good position, no pain, spinal disease stationary	S. C. Limb flexed, shortened, rotated outward, slight wasting, some movement. Wearing 'Sayre' for spine
10 mths.	..	Long splint sound, weight diseased, side	..	Wearing Thomas' ..	S. C. Still wearing Thomas'; limb in very good position; two sound scars outer side of thigh
6 weeks	..	Weight	..	Bad position; pain on movement	To be treated at home
9 mths.	..	.. ..	Less than 1 year	Walking with Thomas'; large abscess	S. C. Large abscess outer side of thigh. Limb in good position
1 year 3 mths.	..	Long splint sound, weight diseased, side	..	Walking with Thomas'	May 1880, readmitted
17 mths.	3½ years	Weight and long splint	..	Wearing a Thomas'	S. C. Fairly good position; ½ inch shortening; no abscess; no pain; still wearing Thomas'
8 mths.	..	Abscess aspirated, weight	years	Wound discharging..	Cannot be traced
11 mths.	..	Weight, long splint on sound side	2½ years	Much better ..	Excised November 1879, 1 month after discharge. Report, October 1880, wounds nearly but not quite healed; on crutches; condition improved
1 year	..	Long splint sound, weight diseased, limb	..	Health good, walking with Thomas'	April 1880, readmitted; abscess aspirated. Discharged June 1880, wearing Thomas'
11 mths.	..	Weight, long splint on sound side	..	Position good; small abscess	Excised (September 1880) eight months after discharge
1 year	1¾ year	Weight, long splint sound limb	..	Good position; walking with Thomas'	S. C. Walking with crutches and high boot. Shortening about an inch; very considerable movement
5 mths.	2 years	Weight	..	Discharged, walking with Thomas' and crutches	June 1880, reported cured
4 mths.	..	Weight	..	Disease quiet ..	Discharged on account of disease of lungs
..	..	Weight, long splint ..	..	Position improved ..	To be treated at home. June 1880, in good position; no abscess, walking in Thomas'
7 mths.	..	Weight	..	Wearing Thomas'; walking a little	June 1880, reported relapsed; not doing well
..	..	Long splint, weight..	..	Good position; not walking	Cannot be traced
6 mths.	..	Long splint	..	Walking well with Thomas'	June 1880, readmitted
2 mths.	..	Weight	..	Unchanged	Removed by parents. Cannot be traced

The letters S. C. *in the last column indicate that the cases*

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus	Albuminuria or other Complication	Operation
1879								
279	7 M L	6½	3 mths.	Good position; no pain	Injury	No	.. .. ..	No
280	5 F	3	2 years	One wound discharging; abscess forming	Fall	Abscess	.. .. ..	No
281	4 M R	2–11	1 year 1 mth.	Acute pain	Sequela of hooping-cough	No	.. .. ..	No
282	7 M R	5	2 years	Abscess; much flexed	Fall	Abscess	.. .. ..	..
283	8½ M L	..	..	Abscess	.. .. ..	Abscess	.. .. ..	No
284	10 M L	8½	1½ year	Abducted; flexed; no pain	Fall; father's family phthisical	No	.. .. ..	No
285	8 M L	6	2 years	Flexed; wasted ..	Spontaneous; mother died of phthisis	No	.. .. ..	No
286	10 F L	7½	2½ years	Abscess; good position	Spontaneous; phthisis in father's family	No	.. .. ..	No
287	5 M R	3½	1½ year	Pain; flexion; large abscess	Spontaneous ..	.. .. ..	.. .. ..	No
288	5 M R	4½	6 mths.	Good position ..	Fall; mother's family phthisical	No	.. .. ..	No
289	8 M L	6	2 years	Much flexed; large abscess; much wasted	Fall	Abscess	Scarlet-fever ..	Amputation
290	10 F L	9½	6 mths.	Much swelling of limb, with pain	Injury	Abscess	.. .. ..	No
291	8 M R	7–5	7 mths.	Pain	Fall	Abscess	.. .. ..	No
292	6 M L	5½	8 mths.	Pain; flexed ..	Spontaneous ..	No	.. .. ..	No
293	6 F R	4½	1½ year	Pain; adducted ..	Fall	No	.. .. ..	No
294	5 F L	4	1 year	Good position; no pain	Fall	No	.. .. ..	No
295	5 F L	4¼	9 mths.	Very flexed	Fall	No	.. .. ..	No
296	7 M L	5¾	1¼ year	Flexed; abscess ..	Fall	Outer side of thigh	.. .. ..	No
297	5 M R	4½	8 mths.	Good position; pain	Fall	No	.. .. ..	No

were examined by the Sub-Committee on Hip Disease.

Time in Hospital	Total Duration	Treatment Adopted	Onset of First Abscess	State on Discharge	Remarks
3 mths.	..	Weight	..	Walking with Thomas'	Readmitted 5 months later with relapse
5 mths.	..	Long splint, weight..	1 year 5 mths.	No improvement ..	To Incurable Home
9 mths.	..	Weight, long splint	..	Walking with Thomas'	Relapsed; compelled to go to bed again
9 mths.	..	Weight, long splint	1½ year	Wounds discharging; good position	June 1880, disease still in progress
..	..	Abscess aspirated; afterwards opened	..	Wearing Thomas' ..	June 1880, in good position; wound still discharging
7 mths.	..	Weight, splint sound side	..	Walking with Thomas'	Good deal of pain. At home. Cannot be traced
5 mths.	2 years 5 mths.	Weight; Thomas' ..	..	Walking with Thomas'	Not seen lately; walks with a single crutch and goes to school
4 mths.	2 years 10 mths.	.. ..	..	Walking with Thomas'	At Convalescent Home
10 mths.	2½ years	Abscess opened; weight, long splint	..	Walking with Thomas'	
3 mths.	9 mths.	Weight	..	Walking with Thomas'	Cannot be traced. Walking without Thomas'; no limp (June 1880)
1 mth.	..	Weight; abscess opened	..	.. ..	Discharged with scarlet-fever; to Westminster Hospital; limb was amputated
1 year	1½ year	Weight; abscess aspirated twice, did not refill	..	Abscess cured; walking with Thomas'	Is at Convalescent Hospital
9 mths.	..	Abscess aspirated, refilled and still present; wears long splint	..	Walking with Thomas'	
11 mths.	1 year 7 mths.	Weight and long splint	..	Walking with Thomas'	S. C. Still wearing splint; runs about with crutches; good position; ½ inch shortening
3 weeks	..	Weight and splint ..	..	Walking with Thomas'	June 1880, reported wearing Thomas'; walking for last year with occasional pain; good position; no abscess
7 mths.	..	Weight and splint ..	..	Walking with Thomas'	Still in hospital
8 mths.	1 year 5 mths.	Weight	..	Walking with Thomas'	Went to Convalescent Home; apparently cured
..	..	Weight and long splint	..	Abscess soundly healed; wearing Thomas	Still in hospital
..	..	Weight and long splint	..	Wearing a Thomas'	Discharged to Convalescent Home

TABLE OF

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus
1	10 M L	9	1 year	Greatly flexed; adducted; rotation inwards.. ..	.. ..	Above trochanter .. ..
2	8 F R	8	5 years	Flexed; abscess	Phth. in family. Spontaneous	.. ..
3	4½ M L	2½	2 years	Abscess; much distortion	Sequela of measles ..	Abscess in nates .. ..
4	3 M R	2	1 year	Much flexed	Fall	Abscess .. .. ..
5	3½ F L	2½	1 year	Pain; good position ..	.. ..	Abscess .. .. ..
6	5 M L	3	2 years	Flexed; inverted; abscess	Scrofula on mother's side. Spontaneous	.. ..
7	6 F L	4	2 years	Flexed	No phth.	No abscess .. .. ..
8	6 M L	5½	6 mths.	Slightly flexed	Fall	Abscess .. .. ..
9	3 M L	2½	8 mths.	Pain	Spontaneous	Abscess .. .. ..
10	6 M R	4	2 years	Abscess; pain	Spontaneous	.. ..
11	7 F R	6½	6 mths.	Drawn up; pale and wasted	Fall	.. ..
12	6 F B	3	3 years	.. ..	Sequela of measles ..	No abscess .. .. ..
13	5 M R	4–8	4 mths	Much flexion	Spontaneous	Abscess .. .. ..
14	3½ M L	2	1 year 6 mths.	Flexed	F. phth.	Abscess .. .. ..
15	6¾ F R	3¾	3 years	Much flexed; pain ..	Spontaneous	Abscess in front of joint
16	6½ M L	4½	2 years	Flexed	Spontaneous	Abscess .. .. ..
17	12 F B	3½	8 years 6 mths.	Flexed	Fall; no phth.	Abscess (very large) in both limbs
18	3 M	..	6 mths.	.. ..	Phth. in both parents ..	.. ..
19	6½ F L	6½	3 mths.	Flexed and adducted; pain	? fall	No abscess .. .. ..
20	11 M	9½	1 year 6 mths.	Pain, much flexed; night screams	Fall	Abscess .. .. ..

DEATHS.

Albuminuria or other Complication	Operation	Cause of Death	Time in Hospital	Total Duration	Remarks
None	No	Meningitis ..	1½ year	4½ years	Was cured and was apprenticed. Died 3 years after of tubercular meningitis
.. ..	No	Meningitis ..	4 days	5 years	Discharged 4 days after admission comatose. Died 3 days afterwards
.. ..	No	Meningitis ..	1½ year	3½ years	
Strumous abscess at wrist	No	Meningitis ..	2½ years	3½ years	Wide suppuration. Went to Convalescent Hospital with wounds nearly healed. Returned in 5 weeks with meningitis, and died in 4 days
Measles, chicken-pox, and scarlet-fever	No	Meningitis ..	3 years	4 years	Intercurrent measles 9 days after admission; sent home. Readmitted 2 months later; wounds open for 18 months, then closed. Child allowed to walk. Scarlet-fever. Relapse after this from a fall. 3 months later meningitis
Albuminuria, tuberculosis	No	Meningitis ..	1¾ year	3¾ years	Disease apparently cured, abscess healed
Tuberculosis	No	Meningitis ..	4 mths.	2½ years	
.. ..	No	Meningitis ..	6 mths.	1 year	
Scarlet-fever	No	Meningitis ..	3½ years	Upwds. 4 years	To Convalescent Hospital, much improved, with slight discharge and limb in good position
.. ..	No	Meningitis ..	3 mths.	2¼ years	Improved considerably and was doing well, when attacked with meningitis
Spinal disease (cervical) suppurating	No	Meningitis ..	1 year 2 mths.	1 year 8 mths.	Hip symptoms subsided. Abscess over joint receded, while spinal disease advanced
? Tuberculosis	No	Meningitis ..	1 year	..	Sudden death at Convalescent Home 6 months after discharge. ? Meningitis. Previous symptoms of lung disease. Mischief in hips quiescent
.. ..	No	Meningitis ..	2½ mths.	6½ mths.	Abscess observed 2 months after admission; at same date meningitis developed
.. ..	No	Meningitis ..	1 year 2 mths.	2 years 8 mths.	Abscess aspirated several times. Limb in good position. Child's health good. Sudden onset of meningitis
.. ..	No	Meningitis ..	10 mths.	3 years 10 mths.	Abscess continued to discharge up to time of brain attack
.. ..	No	Meningitis ..	2 mths.	2 years 2 mths.	
.. ..	No	Meningitis ..	9 mths.	9¼ years	Abscesses repeatedly aspirated and cured; disease quiescent
.. ..	..	Meningitis ..	..	1 year 5 mths.	6 months at a convalescent hospital, then relapse. Returned to hospital and died 3 months later
.. ..	No	Meningitis ..	1 year	1¼ year	Hip symptoms much relieved
.. ..	..	Meningitis ..	2 mths.	1 year 8 mths.	

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus
21	7 M L	5	2 years	Much flexed and adducted; night-screams	Fall	No abscess .. .. ..
22	11 F L	10½	8 mths.	Good position	Spontaneous	No abscess .. .. ..
23	3 F L	2	1 year	Much pain; flexed ..	Phth.	Abscess .. .. ..
24	11½ F R	4½	7 years	Position fair; external rotation; sinus; general exhaustion; profuse suppuration	Phth., sequela of scarlet-fever, followed by dropsy	Many sinuses upper part of thigh
25	3½ M R	1½	2 years	Limb flexed; spinal disease	No phth. Fall	Abscess .. .. ..
26	8 F R	5	3 years	Severe pain; no abscess ..	Spontaneous	.. ..
27	7 F R	6	1 year	Flexed	Phth.	Abscess in groin .. ..
28	3 M L	3	2 mths.	Sickly, in pain	Fall	In pelvis and outer side of thigh
29	8 F R	4	4 years	Pain; abscess	Father phth.	.. ..
30	8½ F L	8	6 mths.	Much flexed; abscess ..	.. ..	.. ..
31	6 F L	5	1 year	Flexed; abscess	.. ..	.. ..
32	8 F L	7	1 year	Wasted; much flexed ..	Phth.	Abscess .. .. ..
33	4 M L	3	1 year	Abscess	Phth. in family	.. ..
34	9½ M B	2½	7 years	Both legs flexed; old abscesses closed	Fall	.. ..
35	5 M L	4	1 year	Abscess; wasting; much distortion	Fall	.. ..
36	4 M	3½	6 mths.	Abscess	Phth. both parents. Fall.	Abscess .. .. ..
37	7 M R	5	2 years	Pain; good position ..	Spontaneous	Abscess .. .. ..
38	7 M R	5	2 years	Good position	Spontaneous	Abscess .. .. ..
39	5 M L	5	3 mths.	Flexed	Phth. F. Spontaneous ..	Abscess .. .. ..
40	5–11 F R	1–11	4 years	Much flexed	Spontaneous. ? phth. ..	Abscess .. .. ..
41	6 F R	4	2 years	Flexed	Fall..	Abscesses .. .. ..
42	8 F	7–2	10 mths.	Flexed; large abscess near spine	Phthisis in mother's family	Abscess .. .. ..
43	4 M L	3	1 year	Abscess; pain; wasting; distortion	No phth.	Abscess .. .. ..

Albuminuria or other Complication	Operation	Cause of Death	Time in Hospital	Total Duration	Remarks
Albuminuria following scarlet-fever	No	Meningitis ..	5 mths.	2 years 5 mths.	Hip symptoms much improved
.. ..	No	Meningitis ..	6 weeks	9½ mths.	
Disease of spine and knee	No	Meningitis ..	1 year 5 mths.		Death two years after disharge
Prolonged albuminuria	No	Albuminuria; dropsy; exhaustion	3 years	10 years	Sinuses never entirely healed
Spinal disease and albuminuria	No	Dropsy; exhaustion	1½ year	3½ years	Suppuration profuse, fœtid discharge; fever; wasting
Albuminuria	No	Dropsy ..	4 years	7 years	
.. ..	No	Dropsy; exhaustion	5 years	..	Discharged incurable
Albuminuria	No	Dropsy ..	1 year	1½ year	Discharged incurable
Albuminuria	No	Dropsy ..	2 years	6 years	
Albuminuria	No	Dropsy ..	2 years	2½ years	
.. ..	No	Albuminuria	3 years	..	Discharged incurable
.. ..	No	Dropsy; exhaustion	2½ years	..	
Swollen wrist; albuminuria	No	Dropsy	1 year	..	Discharged incurable
Albuminuria	No	Albuminuria	1¼ year	1st attk. 3 years Relapse 3½ years	Disease with abscesses, beginning at age of 2½; became quiescent 3 years later. Renewed by injury (right side) 2 years afterwards. Abscesses recurred; healed 6 months before admission. Small abscesses formed and discharged (both sides) while he was in hospital. Discharged incurable
Measles; albuminuria	No	Dropsy ..	1 year	2 years	Discharged incurable
Albuminuria	No	Albuminuria	1½ year	3 years	Discharged incurable
Dropsy	No	Dropsy; exhaustion	1¾ year	3¾ years	Disease quiescent on admission; splint. Ordered to Margate. 2 months after returned with abscess. To Convalescent Hospital 6 months later; abscess closing; 6 months after returned very ill and died in a month
Albuminuria	No	Albuminuria	1¾ year	..	Discharged convalescent. Returned in 2 months with abscess; continued suppurating till his death
Albuminuria	No	Albuminuria	1 year 6 mths.	..	Profuse suppuration. Discharged incurable
Albuminuria	No	Dropsy ..	3 years	7 years	Died in Incurable Home soon after discharge
.. ..	No	.. ..	2½ years	..	To Margate. Incurable. Died of dropsy, July 1880.
Albminuria, ½	No	.. ..	6 mths.	..	
.. ..	No	Exhaustion	1 mth.	..	Abscess communicating with bowel

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus
44	6½ F L	6	6 mths.	Flexed	.. ..	.. ..
45	5 M R	3	2 years	Abscess	Following injury	Outer and inside of thigh
46	6 M R	5	1 year	Large abscess; wasted ..	F. and m. died of phth. ..	Burrowing down thigh ..
47	11 F L	10	1 year	Much pain	Spontaneous	Abscess .. .. ..
48	3½ F L	2–5	1 year 4 mths.	Much distortion; several sinuses discharging	Fall; no phth.	Numerous sinuses ..
49	7 F B	6	1 year	Extremely flexed; abscess both sides	Fall	Both sides .. .. ..
50	5½ F	3½	2 years	Much deformity	Phth. m. Spontaneous ..	Abscess in groin .. ..
51	5 M R	3½	1 year 6 mths.	Abscesses; health bad ..	Spontaneous	Abscess .. .. ..
52	8½ M L	6	2 years 6 mths.	Flexed to right angle; everted; abducted; much pain	No phth. in family. Kick	Abscess in front of hip ..
53	10 M R	9½	6 mths.	Flexed	Fall	.. ..
54	4½ M R	3½	1 year	Pain; wasted and flexed	Spontaneous	Abscess in groin .. ..
55	4 M R	3½	4 mths.	Pain and abscess; good position	F. phth.	.. ..
56	11 M L	10	1 year	Abscess; great pain ..	Spontaneous	Abscess .. .. ..
57	6 M L	5	1 year	Flexed; no abscess or pain	Spontaneous	.. ..
58	8½ M R	6½	2 years	Flexed	Phth. m. Spontaneous ..	Abscess .. .. ..
59	5 M R	4	1 year	Flexed, with large abscess	Spontaneous	Inner and outer side of thigh
60	6–8 M	6	8 mths.	Good position; abscesses forming	Spontaneous	Outer part of thigh ..
61	11½ F L	10	1 year 6 mths.	.. ..	Phth. in family. Spontaneous	Abscess in groin, and diffused through thigh
62	10 F L	7	3 years	Good position	Spontaneous	Abscess around joint ..
63	7 F R	5½	1 year 6 mths.	Abscess; limb good position	Fall	Outer side and front of thigh
64	8 F L	7½	6 mths.	Flexed; acute pain ..	Fall	Abscess .. .. ..
65	3 M L	1	2 years	Abscess; scrofulous abscess in neck and arm	Fall	Upper part of thigh ..
66	6 F B	4	2 years	Good position, left. Right, quiet, good position	Spontaneous	Front of thigh .. ..
67	6½ M	1½	5 years	Flexed	Spontaneous	.. ..

Albuminuria or other Complication	Operation	Cause of Death	Time in Hospital	Total Duration	Remarks
.. ..	No	Exhaustion	2 years	..	Discharged incurable
.. ..	No	Exhaustion	10 mths.	3½ years	Discharged incurable
.. ..	No	Exhaustion (diarrhœa)	1 year	2 years	On admission much exhausted. Obstinate diarrhœa for two months before death
Abscess on chest ..	No	Exhaustion	4 mths.	1½ year	Discharged incurable, died 2 months afterwards
.. ..	No	Exhaustion	6 mths.	1 year 10 mths.	
Disease of cervical spine	No	Exhaustion	10 mths.	Upwds. 2 years	Discharged incurable; died at home several months afterwards
.. ..	No	Exhaustion	9 mths.	2¾ years	Prolonged suppuration. P.M. Extensive disease of pelvis
Persistent diarrhœa ..	No	Diarrhœa; exhaustion	4 mths.	..	Child very delicate on admission. Persistent diarrhœa all the time. Discharged in same condition. Died in Incurable Home
Phth.	No	Phthisis ..	3½ years	Upwds. 6 years	Hip disease stationary for many months before discharge. Abscess receded
.. ..	Excision	? phthisis ..	1 mth.	..	Went out in good position; 4 years afterwards relapse; 12 months later death after excision
Measles; phth.	No	Phthisis ..	9 mths.	2 years	
Phth.	No	Phthisis ..	1¼ year	2½ years	Discharged with advanced phth. Sinuses contracting; slight discharge
.. ..	No	Phthisis ..	6 mths.	Upwds. 1½ year	Discharged incurable. Cough, profuse sweating
.. ..	No	Phthisis ..	1 mth.	1 year	Died after few hours' illness of tubercular disease of larynx
Hæmorrhage into abscess cavity, after opening	No	Phthisis ..	2 years	4½ years	Local disease somewhat improved, but wounds still open. Extensive tubercular disease of the lungs. Died at home 6 months after discharge
Albuminuria	No	Phthisis; dropsy	2 years	..	Discharged incurable
Albuminuria; phth. ..	No	Phthisis; albuminuria	1½ year	2 years	Discharged incurable
Albuminuria; phth. ..	No	Phthisis; albuminuria	1 year	Upwds. 2½ years	Discharged incurable
Pyæmia	No	Pyæmia ..	1½ year	4½ years	
.. ..	No	Erysipelas; exhaustion	8½ years	..	Abscesses opened by incision. Fever, wasting, abscess putrid, limb became everted. Erysipelas
Albuminuria	No	Erysipelas ..	1½ year	..	Discharged 1876 incurable. Seen 1878 much better. Died of erysipelas
.. ..	No	Exhaustion after chicken-pox	1½ year	3½ years	
Diphtheria	No	Diphtheria ..	1 year	3 years	Left abscess opened, nearly healed. Right abscess receded to size of walnut; never opened. At time of diphtheritic attack seemed in fair way of recovery
Measles	No	? Intercurrent disease			

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History — Alleged Cause	Seat of Abscess or Sinus
68	5 F R	3½	1 year 6 mths.	Abscess; flexion	Fall; no phth.	.. ..
69	3½ M	1½	2 years	.. ..	Spontaneous	.. ..
70	6½ M L	4½	2 years	Flexed	Fall	Abscess .. .. ..
71	4 F B	4	2 mths.	Flexed, both sides ..	Spontaneous	Scarlet-fever .. ..
72	10 F R	9	1 year	Flexed; acute pain ..	Phth. m. Spontaneous ..	Abscess .. .. ..
73	7 M	6½	8 mths.	.. ..	Spontaneous	.. ..
74	6 F R	4½	1 year 6 mths.	Severe pain on movement; good position; hip brawny	No history of phth. Spontaneous	Abscess front of joint ..
75	4 M R	2–8	1 year 4 mths.	Flexed	Fall	.. ..
76	8 M R	7	1 year	Slightly flexed	Spontaneous	Abscesses inner side of thigh
77	6 F L	4	2 years	Flexed, acute pain; much wasted	Spontaneous. 3 others in family with hip disease; one with spine disease	Abscess at back of thigh
78	3 M R	1–10	1 year 2 mths.	Much flexed; in great pain	Fall	Abscess .. .. ..
79	6¾ M L	4¾	2 years	Large abscess discharging; already aspirated	Spontaneous	Abscess .. .. ..
80	8 M R	4	4 years	Considerable flexion; abscess	Spontaneous	.. ..
81	3½ M R	2	1 year 6 mths.	Flexed; abscess	F. phth. Spontaneous ..	Abscess outer side of thigh
82	6½ F L	4½	1 year	Flexed	Fall	Abscess outer and inner part of thigh
83	7 M B	L 4 R 6½	3 years 6 mths.	Much distortion; abscess left side discharging on admission; right limb no abscess	Phth. m. Sequela of variola	.. ..
84	3½ M L	2	1 year 6 mths.	Much flexed	Phth. m.	Abscess .. .. ..
85	7 F R	4½	2½ years	Pain; flexion	Spontaneous. Phth. ..	In groin .. .. ..
86	3½ M	2–10	8 mths.	.. ..	Fall	.. ..
87	10 M L	8	2 years	Flexed; 7 discharging wounds	.. ..	Abscesses .. .. ..
88	5 M L	4	1 year	Flexed	Fall	Abscess .. .. ..
89	5 F R	5	2 mths.	Bone absorption; displacement; abscess	Sequela of measles. Phth. in family	.. ..
90	F	..	..	Distortion; abscess ..	.. ..	.. ..
91	3 M L	7mths.	2 years 5 mths.	Pain; flexion	Uncertain	Abscess .. .. ..

Albuminuria or other Complication	Operation	Cause of Death	Time in Hospital	Total Duration	Remarks
Croup	No	Croup ..	2 mths.	1 year 8 mths.	Tracheotomy
Croup; varicella ..	No	Croup; bronchitis	2 mths.	2 years 2 mths.	
Mesenteric disease ..	No	Mesenteric disease	8 mths.	3 years	To country, sinuses nearly closed. Pale and very wasted
Scarlet-fever	No	Exhaustion after scarlet-fever	1½ year	1 year 8 mths.	Abscesses formed and continued to discharge. Attacked with scarlet-fever; on recovery sent home, and reported to have died 3 weeks later
Double pneumonia ..	No	Double pneumonia	6 weeks	1 year 1 mth.	
.. ..	No	Tuber. pneumonia	2 mths.	10 mths.	
Dropsy	Excision	Sank rapidly after excision; albuminuria	3½ years	8 years	Numerous abscesses, sometimes all but healed, then relapses. Albuminuria for 4 years. Excision in the country, rapidly sank
.. ..	Excision	.. .. ..	8 mths.	..	Walking well on discharge; later relapse. Excised elsewhere. Died 6 weeks later
.. ..	Excision	.. .. ..	2 years	About 3 years	Excised elsewhere
.. ..	Excision	Exhaustion	1½ year	5 years	Died at home about a year after excision, wounds never healed
.. ..	Excision	.. .. ..	1 year		
.. ..	Excision		6 mths.	3 years 8 mths.	Excised 3 months after discharge. Died a year later of exhaustion
.. ..	No	Unknown ..	2 years	6 years	Went out with limb straight and ankylosed; sinuses healed; ¾ inch shortening; health good
Disease of spine and elbow. ? Elbow excised	No	Unknown ..	6 years	10 years	Discharged incurable. Died 2½ years later
.. ..	No	Unknown ..	2 years	..	Discharged incurable
.. ..	No	Unknown ..	6 mths.	..	Discharged incurable
.. ..	No	Unknown ..	8 mths.	..	Discharged incurable
.. ..	No	Uncertain ..	1 year	..	Discharged apparently cured Died 8 years after leaving hospital
Hooping-cough ..	Operation	Uncertain ..	1 mth.	3 years	Died 2 years after discharge, after an operation
Phth.	No	Unknown ..	3 mths.	3½ years	Died at home a year after discharge
.. ..	No	Unknown ..	6 mths.	Upwds. 3½ years	Died at Incurable Home
.. ..	No	Unknown ..	1½ year	Upwds. 1½ year	
.. ..	No	Unknown ..	..	..	Discharged incurable 3 months after admission
Chicken-pox	No	Unknown ..	..	Upwds. 3½ years	Abscesses large, discharge profuse. Died 18 month later

No.	Age, Sex, and Side	Age when Attacked	Duration before Admission	State on Admission	Family History / Alleged Cause	Seat of Abscess or Sinus
92	6 M L	..	..	.. ..	Sequela of measles ..	Abscess in groin .. ..
93	9½ F L	8	1½ year	4 wounds discharging ..	Spontaneous	.. ..
94	7 F L	5½	1½ year	Much flexed	After measles	.. ..
95	10 F R	9	1 year	Very much flexed; pain..	.. ..	Abscess .. .. ..
96	10¾ M L	10	9 mths.	Flexed; abscesses ..	No phth. Spontaneous ..	Abscesses .. .. ..
97	4¾ F L	4–5	4 mths.	Much flexed; pain ..	No phth. Fall	Abscess .. .. ..
98	8–11 F L	5–11	3 years	Flexed; abscess	Sequela of measles ..	Abscess .. .. ..
99	5–7 F L	5¼	4 mths.	Fair position; pain ..	No phth. Spontaneous ..	Abscess .. .. ..
100	7 M L	5¾	1¼ year	Flexed	Spontaneous	Abscess .. .. ..
101	4½ M L	3·2	1½ year	Flexed; adducted ..	Fall	Abscess .. .. ..
102	9 M R	7½	1½ year	Abscess, bad position; 4 sinuses; child weak	Fall	Abscesses .. .. ..
103	6 M R	5	1 year	Much flexed; abscess; wasted	Fall	Abscess .. .. ..
104	10 M R	7½	2½ years	Flexed; abscess; child wasted	Fall	Abscess .. .. ..

Albuminuria or other Complication	Operation	Cause of Death	Time in Hospital	Total Duration	Remarks
.. ..	No	Unknown ..	2½ years	Upwds. 3 years	Improved. Relapse in 2 months. Then abscesses, long discharging, wasted
.. ..	No	Unknown ..	4 mths.	2 years	Discharged incurable
.. ..	No	Unknown ..	8 mths.	2 years	Excision declined by parents. Discharged and died 8 weeks afterwards
.. ..	No	Unknown ..	1 year	2½ year	Abscess closed, child considerably improved. Died 4 months later in Convalescent Home
.. ..	No	Unknown ..	4 mths.	2 years	Died 12 months after discharge
.. ..	No	Unknown ..	2 years 5 mths.	2¾ years	
.. ..	No	Unknown ..	1 year 10 mths.	..	Discharged as incurable
.. ..	No	Unknown ..	1 year 2 mths.	..	Abscess opened. Discharged incurable
.. ..	No	Unknown ..	1 year 1 mth.	..	Abscess aspirated. Discharged as incurable
.. ..	No	Unknown ..	1¼ year	..	Profuse suppuration. Discharged as incurable
.. ..	No	Unknown ..	2 mths.	..	Died in Workhouse Infirmary
.. ..	No	.. .. ..	6 mths.	2 years 4 mths.	Incurable; mother removed him. Died at home 10 months later
Albuminuria	No	.. .. ..	4 mths.	2 years 8 mths.	Incurable; with dropsy. Died at home 2 months after

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